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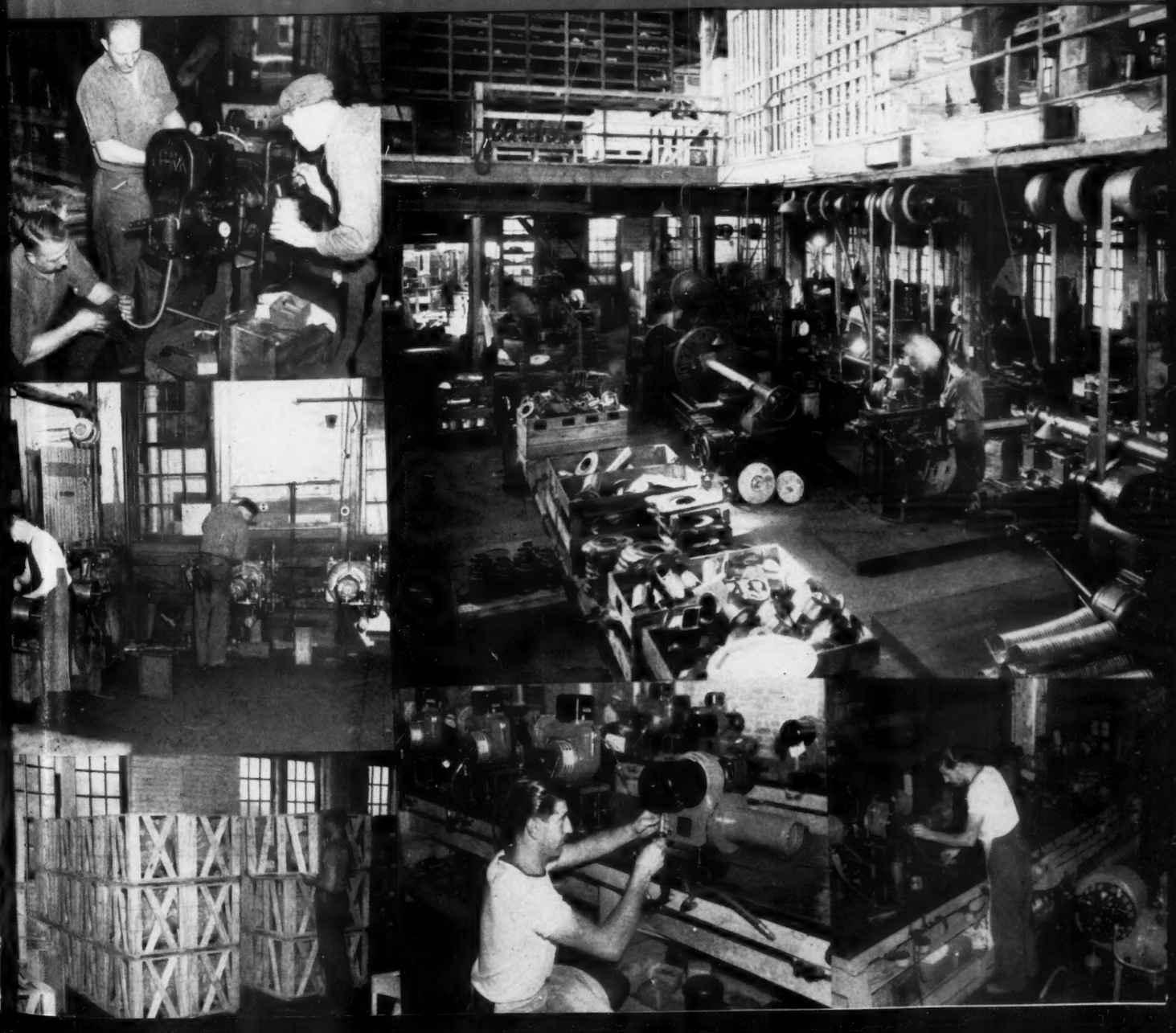
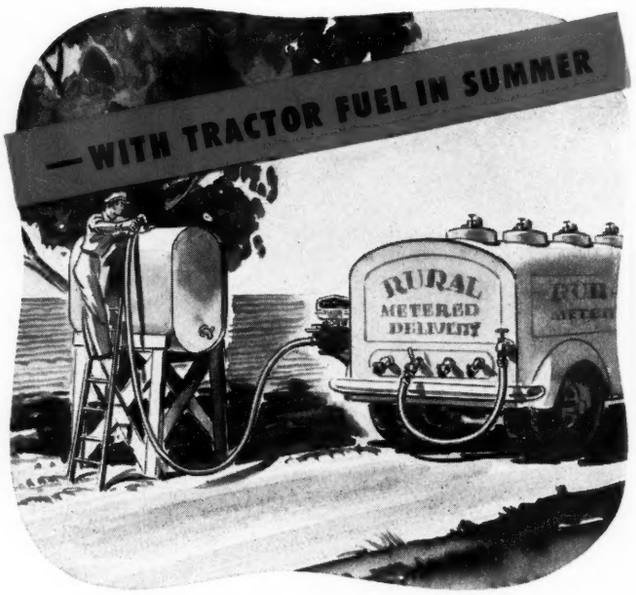


Develop Year 'Round Deliveries

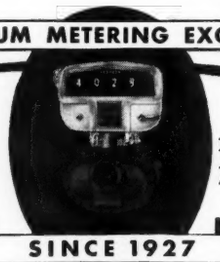


—on Rural Routes

From the standpoint of rural deliveries, the farm market offers year 'round business to oil marketers, as modernization plans for farm improvements strongly favor oil heat. This means that every farm customer who buys tractor fuel in summer is a good prospect for heating oil in winter. The same tank truck equipment can be employed to deliver both products, in supplying the season's demand. Equipped with Brodie Meters, these rural tank trucks not only make faster deliveries, but cover more territory in much less time. Through the use of Brodie Meters every single gallon of fuel is accurately accounted for, with less waste of product and effort. Savings in time and errors effect a lower cost and higher profit per gallon delivered. Round out rural deliveries with dependable Brodie Meters. Write for full details, today.

BRODIE METERS

PETROLEUM METERING EXCLUSIVELY



SINCE 1927

RALPH N. BRODIE CO., INC.
953 61ST STREET, OAKLAND 8, CALIF.

DIVISION OFFICES: *Chrysler Bldg., New York City*
59 Van Buren, Chicago 5 • 302 South Pearl St., Dallas 1, Texas • 221-9th Ave., Seattle 9, Wash.
2101 S. San Pedro, Los Angeles 11, California

REPRESENTATIVES AND STOCKS IN ALL PRINCIPAL CITIES

VOL. 5, NO. 9

fueloil & oil heat

JANUARY

1947

Names in the News

C. E. "Borie" Lewis, recently appointed executive vice-president of Perfex Corp., Milwaukee, was on December 16 elected president and a director of the corporation. Lewis joined Perfex three years ago as vice-president in charge of control sales, having formerly been an executive of Delco and General Electric, and for three terms president of the Oil Heat Institute.

Wiley, "Dixie," Butler, formerly vice-president, has been elected president of Coastal Oil Co., Newark, succeeding Louis E. Marron, who now becomes chairman of the board. Butler recently returned from Army service where he was a colonel in the Div. of Fuels and Lubricants. He is chairman of the executive committee of the Atlantic Coast Oil Conference and its representative on API's directorate.

D. B. Hodges has been named vice-president of transportation and supplies for Shell Oil Co., Inc., New York. He first joined Shell at Ventura, Calif., 20 years ago, becoming administrative assistant in manufacturing 10 years later, coming to New York in 1940 as manager of shipping and supplies. During the war Hodges was PAW's associate director of the Transportation and Supply Division.

Ralph B. Edwards was recently appointed manager of the Southeastern Div.

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KOVEN

WATERFILM BOILERS FOR ECONOMICAL QUICK HEAT!

THE home of today, built to the requirements of modern living, demands a heating unit that will provide dependable, economic comfort. That's why so many home-owners, architects and industrial builders insist on the quick-heating KOVEN WATERFILM BOILER, whose patented construction gives you the most in heating satisfaction—and an abundance of domestic hot water.

The WATERFILM is a special favorite with homemakers because its attractive design adds to a finished basement and blends smartly with any surroundings. For large or small homes, apartment houses and industrial plants, the KOVEN WATERFILM BOILER offers the ultimate in economical heating comfort.

EVEN ROOM TEMPERATURE

THROUGHOUT THE HOUSE!

WATERFILM BOILERS, Inc.

154 Ogden Avenue, Jersey City 7, N. J.

Plants: Jersey City, N. J. • Dover, N. J.

of Wayne Home Equipment Co., Ft. Wayne, Ind., having been Southern service manager.

David L. Simpson was appointed general manager for "X" Laboratories, New York, coming from the duPont Co. *C. R. Critchfield,* formerly with the Simoniz Co., will be in charge of plant operations.

W. A. Matheson has advanced to the position of executive vice president in charge of the Williams Oil-O-Matic Div., Eureka Williams Corp., Bloomington, Ill. He formerly was vice-president of the corporation and manager of Williams Oil-O-Matic Div. *O. E. Nesmith,* formerly

Nesmith

Bernard

director of engineering, was appointed vice president in charge of engineering and *Gray H. Bernard,* formerly works manager, was named vice president in charge of production. *George T. Stevens,* who was a vice president of the corporation and manager of the Eureka Div., became executive vice president in charge of Eureka.

Stanley C. Hope, president of Gilbert & Barker Mfg. Co., has also been elected president of Stanco Incorporated, Linden, N. J., another affiliate of Standard Oil Co., (N. J.). Stanco manufactures petroleum specialties such as Flit, Mistol and cosmetics.

Henry R. B. Irish is now associated with the C. A. Olsen Mfg. Co., according to a recent announcement made by C. A. Olsen, president. Irish was formerly with the Trust Adjustment Div. of the Central National Bank of Cleveland. During the war he was attached to the Army Air Forces training command at various posts.

TO ALL —

AND A HEARTY "THANK YOU"

TO ALL

for this past year's business. We hope that 1947 will be a prosperous year for you and that State Tank Company may share in your prosperity.

Joseph M. Rogers

STATE TANK CO.

NEW HAVEN, CONN.

fueloil & oil heat

Editorial Leaks

Once more the staff has delivered a Statistical Issue to the oilheating industry—has delivered it with hope, gratitude and relief. The relief springs from the sudden release from pressure that each year turns December into a month of days, nights and holidays filled with figures, comparisons and projections, all considered and compiled against the merciless ticking of the clock, and the steady march down the calendar toward the inevitable deadline.

Sincere gratitude goes to the hundreds of members of the oilheating industry who each year supply their own individual records that make up the totals. Dealers spend untold hours answering four single-spaced pages of questions. It is not possible to make direct payment for such cooperation. The booklet sent as a token of gratitude is only symbolic of a deeper regard for the display of teamwork the field puts on each December.

It is our sincere hope that those who help make another Statistical Issue possible, and the thousands of others who will read it, will find it useful. Not all the totals and conclusions will please, satisfy or entertain every member of the industry, but we fervently hope that this history, like all other history, will be used to guide us all to a better future.

◈

Some economists have called 1946 the postwar shake-down year, while others with whom we are more in agreement, look upon it as a shake-up period, with the settling yet to come—probably in 1947.

As this year starts, the oilheating industry still is in an unhealthy condition. Demand remains high, supplies of most materials are too tight, and the act of acquiring materials assumes an importance far ahead of the price paid for them. This is no sound basis on which to plan the future. It lends an importance to production far beyond its real status in our industry's economy.

There are signs of a change which probably will occur in 1947. Dealers report that prospective customers are a little less anxious to buy oilheating at any old price. Those dealers, in turn, are less anxious to pay any price that will get delivery of an oilburner, or a major part of an oilburner. Some dealers are starting to advertise for business, and at prices below the current asking price in their communities. These are the first signs of change which we believe will intensify during the year ahead.

Oilheating supply and demand probably will not be in balance until late in the year, if at all in 1947, but the shakedown period most certainly will come within the next twelve months. Smart dealers will get their sales tools sharpened and practice using them. Manufacturers will be spending more time with their distribution engineers than with production engineers, and price will become more important to the manufacturer, the dealer and the user.

The "shake-up" period was relatively easy. It consisted of changing from the production of war materials for one customer, regardless of price, to production of civilian goods for many customers, regardless of price. Hazarding a prediction, we believe 1947 will see the true transition to the postwar era we were discussing back in 1944, and things will be a lot different before next January.

◈

Few members of the oilheating industry can read the report from Toronto elsewhere in this issue of the warning to prospective oilburner purchasers without an instinctive immediate desire to deny the need for it, but people do not spend money for display advertising unless it can serve some purpose. The Toronto Better Business Bureau has seen fit to indicate a few points every prospective purchaser should consider. It is not the wording of the copy that stings us, but the fact that such a warning has become necessary.

Every conscientious member of the industry is ashamed of some of the equipment, workmanship, prices and practices that have been all too common during the last year. With demand so far ahead of oilburner supply, anything that looked like a burner could be sold at twice its value. The better elements of the business have shuddered at the thought of the possible reaction.

Undoubtedly, it was to protect the buying public, and less directly the Canadian oilheating industry, that the advertisement was run. We would prefer to see the industry policed in some more private manner, but that sometimes is not possible. It is better to get washed and hung on the line for all to see than not to get washed at all.

◈

Back in the newspaper limelight because of their temporary use as gas carriers to the Midwest, the two Big Inch pipelines are still very much problem children of several assorted Washington groups. Recently the Slaughter Committee (House) conducted hearings for many days, interviewed much the same parade of experts that have been called to Washington for the several earlier hearings. Some of the witnesses felt that the attitude of the Committee on various points leaned in the direction of selling the big pipes to transport natural gas. But if that should be their formal recommendation, all of Congress must vote on it before it becomes an actuality.

For the present, and at least until April 30, 1947, natural gas under its own pressure is flowing from Louisiana to South-central Ohio, and is helping very materially to relieve serious shortages in some of the larger cities . . . shortages due to adding too much new home heating load. The lines could be used advantageously on that assignment for years, and there is a slight possibility that the temporary lease may be extended "temporarily" from time to time. This would take the pressure off of Congress on a difficult political decision.

Tennessee Gas & Transmission Company, a war baby which built a gas line from Texas to West Virginia during the war, has leased the lines until the end of April. In the meantime War Assets Administration is again asking for bids, and it is believed possible that a gas company will be the successful bidder. War Assets has said that it has no preference now between the lines' use for oil or gas, so long as facilities necessary for their reconversion are maintained against an emergency.

Tennessee Gas does not plan to move more than 150,000,000 cu. ft. of gas a day

(*Continued on page* 176)

OVER 600,000 STARTS AND STOPS

Prove Mechanical Durability of the Gilbarco Economy Clutch

In grueling endurance tests in the Gilbarco Laboratories, Economy Clutches are performing almost beyond belief! As this is printed, one clutch has engaged and disengaged continuously more than 600,000 times *without even appreciable wear!* This is equivalent to *over 120 years of average home-heating operation.*

If any proof were needed that the amazing new Economy Clutch is an engineering masterpiece — here you have it!

Alert dealers West of the Appalachians: Consider a Gilbarco franchise. Some are still open! Write for further information now.

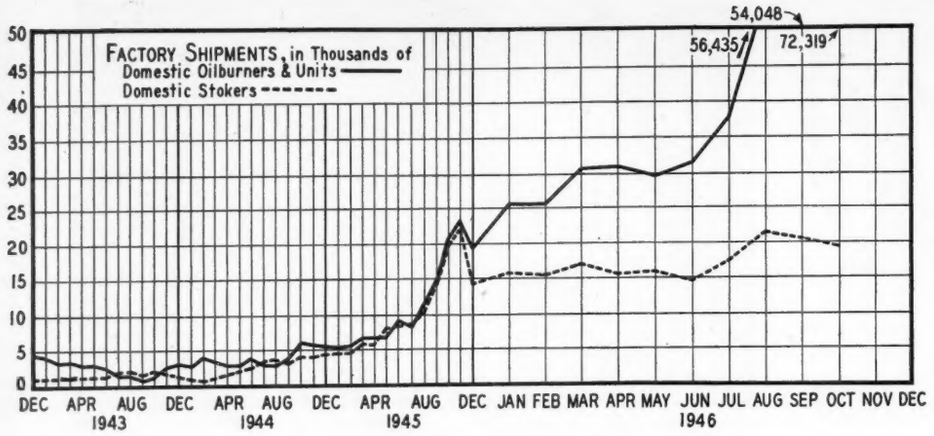
THE OIL BURNER WITH THE ECONOMY CLUTCH

Gilbarco

Gilbert & Barker Mfg. Company
West Springfield, Mass., and Toronto, Canada

WHY THE GILBARCO ECONOMY CLUTCH OIL BURNER GIVES YOU A SALES EDGE:

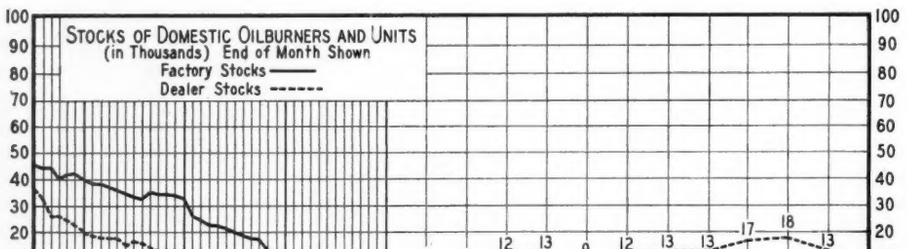
- **IT GIVES GREATER FUEL ECONOMY**...freedom from heavy soot deposits results in important fuel conservation.
- **IT PRODUCES MAXIMUM HEAT**...precision atomization assures full burning of the fuel from instant of ignition.
- **IT ALLOWS MORE UNIFORM HEATING**...closer thermostat adjustment permits more even comfort control.
- **IT ASSURES CLEANER HEATING** . . . both inside and outside the heating plant.
- **IT OPERATES WITH NEW QUIETNESS**...the burner starts and stops quietly, with no strain on the motor.



Shipments of Oilburners and Units

Adjusted to include manufacturers other than the 124 reporting to Census Bureau, FUELOIL & OIL HEAT's estimates of shipments are:

	OCTOBER			TEN MONTHS		
	1946	*1945*	*Percent Change*	*1946*	*1945*	*Percent Change*
Conversion	63,591	17,950	+254.3	351,983	81,029	+334.3
Boiler units	3,374	514	+556.4	19,150	6,153	+211.2
Furnace units	5,354	3,008	+ 78.0	23,833	11,438	+108.3
All domestic	72,319	21,472	+236.8	394,966	98,620	+300.4
Commercial	4,279	2,413	+ 77.3	31,870	29,347	+ 8.6
Total	76,598	23,885	+220.7	426,836	127,967	+233.6


STOCKS OF DOMESTIC OILBURNERS AND UNITS
(in Thousands) End of Month Shown
Factory Stocks
Dealer Stocks
JUN DEC JUN DEC JUN DEC JUN DEC JAN FEB MAR APR MAY JUN JUL AUG SEP OCT NOV DEC
1942
1943
1944
1945
1946

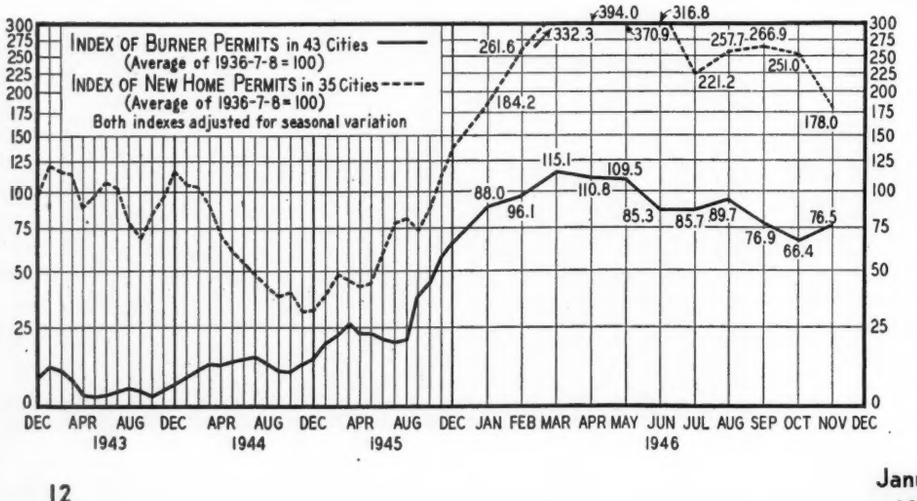
October Minimum Retail Prices: Key Dealer

	CONVERSION BURNERS		BOILER-BURNERS		FURNACE-BURNERS	
	*Top price**	*Low price*	*Top price**	*Low price*	*Top price**	*Low price*
Highest	$520	...	$650	...	$900	...
Lowest	240	...	405	...	550	...
Oct. Aver.	318	...	616	...	595	...
Sept. Aver.	332	...	676	...	555	...

*Top price key dealers for conversion burners are those whose minimum retail prices are $200 or more; for boiler-burner and furnace-burner units (exclusive of ductwork) those whose minimum are $400 or over.

Price Index: Conversion Burners: January 1940 is 100%

WHOLESALE				RETAIL			
Nov.	156.7	Six months ago	125.7	Nov.	147.7	Six months ago	132.3
Oct.	137.7	Year ago	119.0	Oct.	145.4	Year ago	117.6



Oilheating Trends

INSTALLATIONS OF DOMESTIC oilburners and units in November are estimated at 50,991, a substantial drop from October's 64,480, but still big business and many more than installed in any previous November. Total installations for the 11-month period were 403,322, as calculated from monthly dealer reports. Thus, it becomes obvious that our estimate of 420,000 installations for 1946, made two and a half years ago, was on the low side, although it was substantially higher than the forecasts of any of the oil or burner companies. November installations of reporting dealers were divided: 76% conversion burners, 17% boiler-burner units and 7% furnace-burner units.

New orders booked by dealers in November were 39,220, compared with 38,690 in October and 51,500 in November 1945. Total new orders taken in 11 months were 389,598, less than were installed, showing that they whittled down the large backlog that they had at the start of the year, most of which they still have. Many dealers have refused to take new orders.

BURNER STOCKS: Dealer stocks of domestic burners and units on November 30 are estimated at 12,741, just about where they had been running for some months, except for October, when they took a temporary jump, due to extra large factory shipments in the month. Factory stocks on October 31, the latest available data, were 5,503.

SERVICE INCOME: November service department income of reporting dealers averaged $2,739, up 21% from the $2,259 reported by the identical dealers for November 1945. October income was $2,908 and September $3,337.

OIL TANKS: This is the third month in which dealers have been asked questions about availability of oil tanks. This was necessary to be able to know as nearly as possible the true situation, with the thought of getting some priority assistance from Washington. This may not now be possible since controls have been largely dropped from the Housing Program. However, there is still a good chance to get the necessary help on tanks for new homes only. Tanks for the general run of conversion sales are going to

remain tight for some time, unless we are willing to outbid other industries for sheet steel. There was not much change during the month in number of burner installations that could not be completed for lack of a tank, though everything else was on hand. On December 1 approximately 448 jobs were in this shape, countrywide, compared with 331 the previous month. Both figures are inconsequential.

Among all dealers reporting on the tank situation, 63% have little complaint except on price. They either have them on hand, are getting them hand to mouth, or have dependable supply sources that fill their orders within 30 days. Price complaints in this group are numerous, mentioning costs as high as $50 for a 275. Nothing illegal about it any more; it's just supply and demand. Another 7% of the dealers are now in bad shape but can see daylight ahead, expecting to be out of the woods between New Year and February. The remaining 30% are in tight shape with little or no relief in sight. There is strong probability that tank prices will go higher during the next 90 days, then settle back if the steel industry is running near 100% capacity.

COAL STRIKE EFFECT: Asked whether or not the coal strike acted as a stimulant to public interest in oilheating, 48% of reporting dealers believe that it did; 52% think not. Some of those who say that Lewis helped oilheating point out that some people who planned to put in a burner after this heating season came around and asked if they could get one put in right away. Again, Lewis seems to have been responsible for stirring up some customers who had ordered burners and were patiently waiting . . . they became less patient.

Among those who think that Lewis did nothing for us, the consensus is that any new orders taken during the coal scare were coming in anyway. Some have an unusual slant on the strike . . . they point out that all of the stoker dealers in their communities are now in a mad scramble to get oilburners and think that Lewis accelerated this trend. In this issue is a separate story on Lewis.

OIL CUSTOMER TURNOVER: For the first time since before the war, questions were asked this month of fueloil distributors to get an idea of customer turnover during the calendar year 1946. The actual rate of customer loss is surprisingly low compared with prewar years, when there was a lot of price cutting, free deals and other inducements to "let me get it for you wholesale." The composite picture of all reporting companies shows that they lost this year 6% of the customers they had on January 1, and they gained new customers equivalent to 20% of their total at the year's start.

There was quite a difference between companies, some real surprises. The two tables tell the story.

Oilburner* and Building Permits

OILBURNERS — November 1946	OILBURNERS — November 1945	OILBURNERS — 11 MONTHS 1946	OILBURNERS — 11 MONTHS 1945		DWELLINGS — November 1946	DWELLINGS — November 1945	DWELLINGS — 11 MONTHS 1946	DWELLINGS — 11 MONTHS 1945
..	..	..	..	Baltimore, Maryland	553	126	4282	457
..	..	..	..	Binghamton, New York	4	0	116	36
..	..	..	..	Boston, Massachusetts	11	0	192	23
100	102	774	371	Bridgeport, Conn.	..	..	..	..
..	..	..	..	Buffalo, New York	10	0	101	52
..	..	..	..	Des Moines, Iowa	49	0	1156	96
323	102	..	..	Detroit, Michigan	394	506	7761	2925
60	46	716	125	Elizabeth, N. J.	2	0	19	13
68	27	462	145	Freeport, New York	..	..	..	..
..	..	..	..	Greenwich, Conn.	14	0	176	25
..	..	..	..	Hackensack, N. J.	4	0	114	62
278	145	970	603	Hartford, Conn.	..	..	..	..
30	24	502	90	Irvington, N. J.	5	0	21	3
..	..	..	..	Lynn, Massachusetts	11	0	58	4
20	26	209	45	Meriden, Conn.	..	..	..	..
199	90	1099	245	Milwaukee, Wisc.	65	25	1437	482
72	66	644	681	Minneapolis, Minn.	162	54	1469	657
38	25	427	99	Montclair, N. J.	..	..	..	..
44	50	559	244	Mt. Vernon, New York	..	..	..	..
51	65	489	336	New Bedford, Mass.	..	..	..	..
67	25	464	191	New Haven, Conn.	..	..	..	..
0	0	0	0	New Orleans, La.	..	..	..	..
53	36	416	183	New Rochelle, N. Y.	18	15	124	11
686	339	6296	1646	Manhattan, Bronx, Rchd	..	..	..	..
..	..	..	..	Norfolk, Virginia	5	3	221	59
2	1	6	3	Oakland, Calif.	..	..	..	..
84	58	884	216	Omaha, Nebraska	57	20	753	276
35	14	267	85	Orange, New Jersey	0	0	4	1
58	28	548	..	Passaic, New Jersey	..	..	..	..
64	37	900	234	Paterson, N. J.	6	1	70	3
1308	371	7370	1120	Philadelphia, Pa.	..	..	..	..
..	..	..	..	Plainfield, N. J.	0	0	87	17
66	35	479	233	Portland, Maine	7	1	102	6
248	332	2717	1472	Portland, Oregon	63	3	1845	460
78	33	908	166	Providence, R. I.	5	1	129	19
..	..	..	..	Reading, Penna.	0	0	88	22
52	49	341	77	Richmond, Virginia	..	..	..	..
91	19	..	..	Rochester, N. Y.	..	..	..	..
19	26	257	97	Rockville Center, N. Y.	1	0	71	4
37	12	223	69	Salem, Massachusetts	1	0	16	4
154	45	867	173	St. Louis, Missouri	33	0	312	33
147	129	1336	366	St. Paul, Minnesota	58	27	1098	471
40	31	244	222	Schenectady, N. Y.	..	..	..	..
..	..	..	..	Seattle, Washington	106	52	2394	1243
..	..	..	..	Springfield, Mass.	46	1	558	177
29	34	329	123	Stamford, Conn.	..	..	..	..
40	17	305	78	Syracuse, New York	21	1	195	93
..	..	..	..	Trenton, New Jersey	1	0	15	5
..	..	..	..	Utica, New York	2	1	37	8
285	151	2396	494	Washington, D. C.	..	..	..	..
..	..	..	..	West Orange, N. J.	11	0	108	13
71	54	333	202	White Plains, N. Y.	1	0	29	6
162	35	655	139	Wilmington, Delaware	0	0	192	10
136	32	789	303	Worcester, Mass.	..	..	..	..
157	0	674	139	Yonkers, New York	..	..	..	..
5452	2711	36,307	11,015	*Totals*	1715	837	25,350	7776
+101.1		+229.6		*Percent Change*	+105.0		+226.0	

*Permits are not total sales in each market since none are reported from suburban areas, which normally account for 20% to 60% of total sales in each market; nor are they an accurate index where enforcement is lax. Rightly used, however, they are a useful working index.

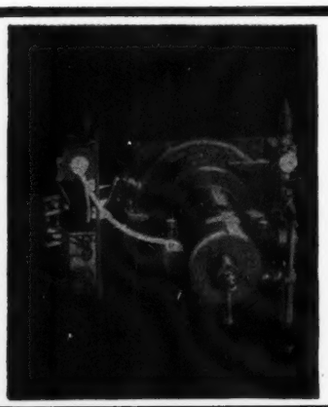
Customers Lost

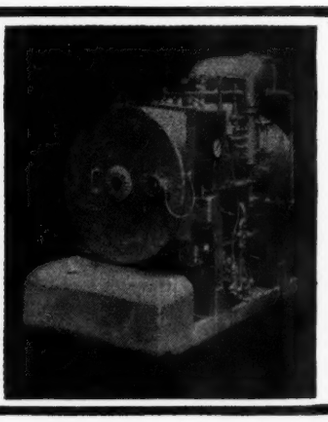
Customers Lost, or % of 1/1/46	*Co's Reporting as % of All Co's.*	*% of Total Volume These Co's Represent*
2% or less	38%	21%
3 to 5%	33	24
6 to 7%	10	29
8 to 10%	19	26

Customers Gained

10% or less	48%	50%
11 to 20%	24	16
21 to 40%	19	25
Over 40%	9	9

FIRST SHOWING
America's Most Complete Line





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YORK 4h HEAT
GENERATOR

York-Shipley's rise to dominating position in the oil-heating field is rooted in two sound, fundamental facts: 1) The scope and quality of the line; and 2) Tremendous acceptance of the line by the ultimate consumer and the trade, alike.

So great is distributor-dealer interest that over 8,000 of them attended previews of 1947 *York-Heat* equipment in four major cities last Fall. And now . . . at the Heating & Ventilating Show in Cleveland . . . the public will see the complete line for the first time.

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If you want to "talk turkey" you'll find York-Shipley's division managers in our Show Office, Booth 662, just down the aisle from the main exhibit.

YORK-SHIPLEY

America's Most Complete Line of Oil-Fired Equipment

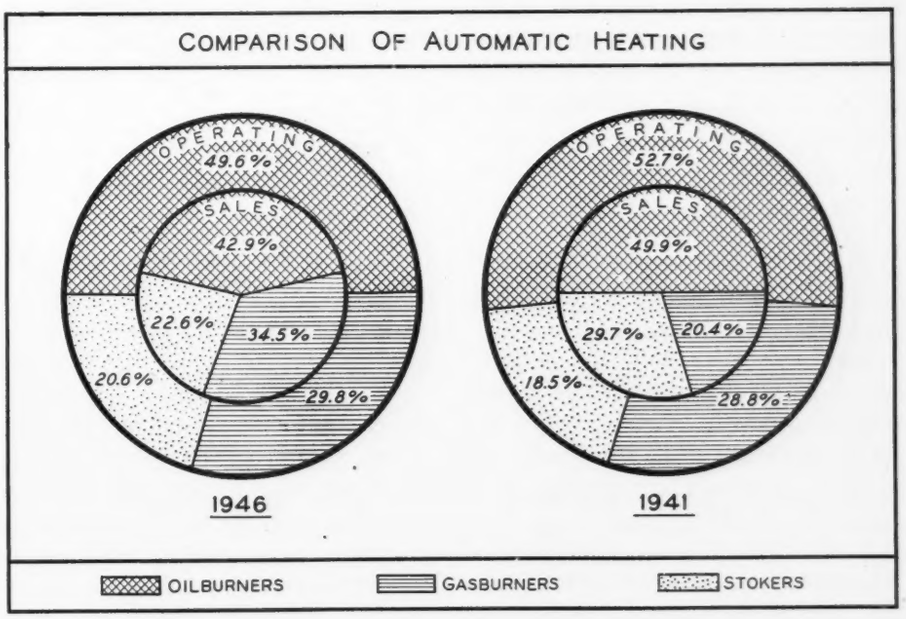
Oilheating Closes Record Year

Sets New High Marks in Spite of Equipment Shortages

PLAGUED BY SHORTAGES, both of oilburners and installation materials, oilheating dealers in 1946 installed nearly 37% more domestic oilburners than ever before in one year, and increased the domestic installations operating at the end of the year by more than 16%. Domestic installations in the United States—conversion burners, boiler units and furnace units—totalled 455,218 for the year, and made a total of 2,936,845 operating at the end of 1946. Commercial installations were up nearly 33% for the year to 40,498, making 383,560 in operation.

Manufacturers shipped 507,142 domestic oilburners and units for central heating during the year. Of this number 33,092 were exported and 18,832 represented an increase in stocks held by dealers.

Dealers held orders for 202,200 domestic installations and 16,540 commercial jobs at the year end. Dealers unfilled orders represent only about a quarter of the manufacturers' backlog of unfilled orders, though most dealers report that they have stopped taking orders for new installations until oilburners, tanks, fittings and other materials become more plentiful. Dealers expect the demand to continue and report that 1947 will far outstrip the 1946 volume "if materials are available." A few admit that they are disappointed in the quality of installation and service help available, and are trying to train their new men while they work. Manpower shortages are not generally serious. Lack of equipment to install has been the most serious limiting factor during the year, and there is some feeling that a shortage of installation materials, such as tanks and fittings, may continue at least through the winter.



There now are 5,918,550 automatic domestic heating installations operating in the country, of which 49.63% are oilfired. This represents a decline of nearly five points for oilfiring, and nearly a full percent for stokers as gas burners hit an all-time high. Of the total automatic heating sales for the year (1,061,870) oil got only 42.9% and gas 34.5%. The following table shows new figures on automatic heating installations operating, due to revisions made by the Gas Appliance Manufacturers Association in the light of more complete statistical information.

Operating 12/31/46		*1946 %*	*1945 %*	*1944 %*
2,936,845	Oilburners	49.63	50.09	50.26
1,764,565	Gasburners	29.81	28.44	29.05
1,217,140	Stokers	20.56	21.47	20.69

TABLE 1

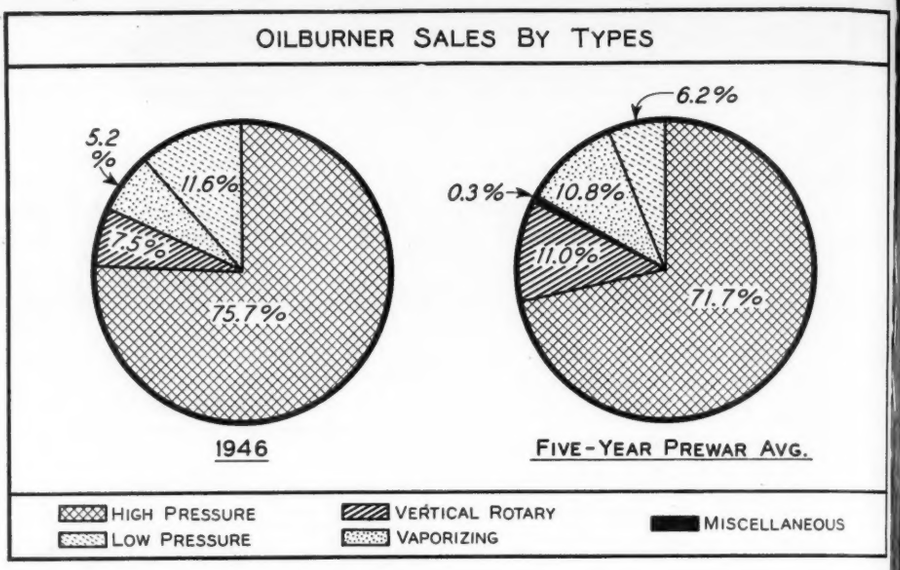
DOMESTIC CONVERSION BURNERS AND UNITS

Sales	*Retail Value*	*Factory Value*	*Year*	*No. in Use (End of Year)*
126,400	.....	.....	1930	648,500
104,000	.....	.....	1931	747,300
89,200	.....	.....	1932	831,120
88,600	.....	.....	1933	914,280
108,290	.....	.....	1934	1,112,870
150,510	$55,342,500	.....	1935	1,152,125
220,075	74,054,700	.....	1936	1,340,675
210,740	69,265,100	$22,238,200	1937	1,530,545
179,360	54,583,900	18,292,900	1938	1,667,745
236,140	66,520,400	23,352,200	1939	1,862,330
302,210	89,548,800	32,273,600	1940	2,135,125
333,250	113,546,400	41,931,800	1941	2,402,060
99,514	29,871,600	14,067,900	1942	2,386,290
33,445	5,283,300	5,431,000	1943	2,375,455
49,915	17,988,300	7,652,000	1944	2,392,265
145,596	49,245,200	17,845,400	1945	2,525,655
455,218	186,299,500	66,625,300	1946	2,936,845

Oil showed a net loss of 5,214 installations to gas during 1946. There were 7,486 domestic oilburner users who changed to gas, and 2,272 gas users who turned to oil. There is no record of the exchange of customers between stokers and gasburners, but domestic oilburners replaces 31,495 stokers, and 331,419 handfired coal installations, accounting for nearly 80% of the domestic oilburners installed during the year. New homes and homes not previously central heated took 53,492 burners, or 11.75%, and replacement of old oilburners amounted to 36,540 or 8.03% of the installations. Oilburner replacements for the year were about 20,000 short of normal, indicating that dealers fought against using hard-to-get burners where no new oil contract could be created. This struggle to keep old burners operating is reflected in the increase in parts used for service.

Table 1 shows the total domestic conversion oilburners and units sold in each year for central heating since 1930, and the number in use at the end of each year, as well as retail and factory value of the annual burner and unit sales.

Retail value of the burners and units sold in 1946 hit a new high of $186,299,500. Though the number of burners and units sold was up 36.6% over the 1941 level, the retail value increased nearly 61%, and the factory value was up to $66,625,300, or 59% above the 1941 peak. As shown in more detail elsewhere in this issue, dealers could not raise their prices by the same percentage that their costs increased during the year.



Of the 455,218 total domestic installations made last year 402,261 were conversion burners. This represents 88.4%, compared with 82.2% in 1945, and 75.9% in 1944. There were 23,309 complete boiler-burner units shipped and installed, or 5.1% of the total and 29,648 complete furnace-burner units, or 6.5%. The following table shows the percentage of conversion burners and units used in the last three years and the prewar average.

Prewar %		*1946 %*	*1945 %*	*1944 %*
80.5	Conversion Burners	88.4	82.2	75.9
9.1	Boiler-Burn. Units	5.1	6.2	12.9
10.4	Furnace-Burn. Units	6.5	11.6	11.2

The low percentage of complete units used reflects again the relative availability of the equipment. An unusually large part of the year's total burners were made by small manufacturers who do not offer complete oilfired units. It is believed the ratios of units to conversion burners will go back to prewar levels or above as soon as units are readily available.

In addition to the complete boiler units shipped and used, dealers made up 35,188 units with conversion burners and new boilers, and 35,640 field assembled furnaces with conversion burners and separate warm air units. These dealer-assembled units took more than 17% of the conversion burners.

Domestic Burner Types

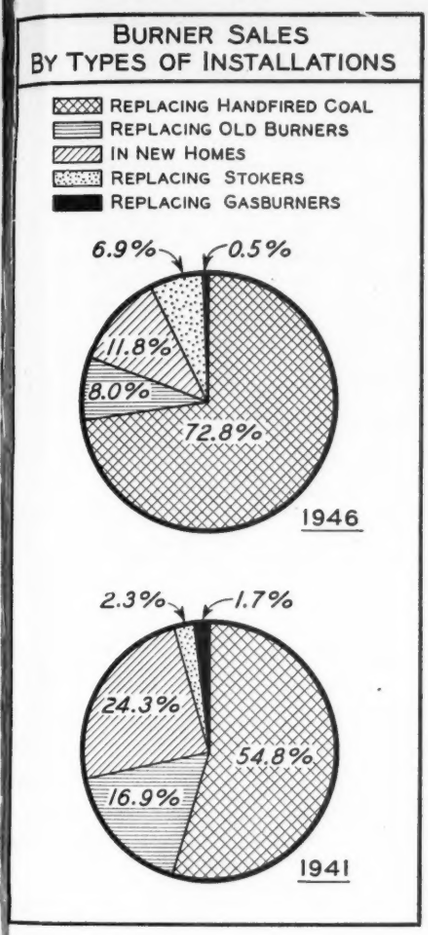
The availability of rotary and low pressure burners in increasing numbers cut the percentage of high pressure burners, compared with 1945. There were 344,711 high pressure burners used last year, accounting for 75.8% of the total, against 77.4% in 1945. Low pressure burners were up slightly to account for 11.5% of the burners installed, and vertical rotary burners were up sharply to 7.5% of the total. Vaporizing burners used in boilers and furnaces represented only 5.2% of the whole, and about half of these were used in new homes. The figures do not include floor and wall furnaces. The following table presents a comparison of 1946 and 1945 with the prewar average for each type of burner.

1946 No.	*1946 %*		*1945 %*	*Prewar Avg. %*
344,711	75.8	High Press.	77.4	71.7
52,556	11.5	Low Press.	11.2	6.2
34,120	7.5	Vert. Rotary	1.6	11.0
23,831	5.2	Vaporizing	9.8	10.8

TABLE 2

DOMESTIC CONVERSION OILBURNERS

Sales	*Retail Value*	*Factory Value*	*Year*	*No. in Use (End of Year)*
126,400	$79,400,000	$24,648,000	1930	648,500
104,000	50,310,000	16,640,000	1931	747,300
86,200	36,911,000	12,068,000	1932	827,320
80,800	31,263,000	10,423,000	1933	902,680
98,990	33,116,000	11,681,000	1934	991,980
136,825	43,373,500	13,408,900	1935	1,115,125
197,430	59,229,000	18,558,400	1936	1,281,305
184,920	54,181,600	15,903,100	1937	1,446,295
153,850	40,462,600	12,154,200	1938	1,559,675
200,020	48,004,800	15,601,600	1939	1,719,940
238,845	55,645,900	18,152,200	1940	1,933,605
237,965	59,490,200	19,275,200	1941	2,113,160
71,658	16,552,700	6,090,900	1942	2,073,260
21,363	1,885,800	1,837,200	1943	2,060,465
37,885	10,607,800	4,184,600	1944	2,072,445
119,680	34,292,200	11,249,900	1945	2,182,510
402,261	148,812,500	47,840,900	1946	2,544,130



Figures in the table represent only those burners and units installed in the United States for domestic central heating. No figures are yet available to show a breakdown by types of the 33,092 domestic burners shipped to other countries, but it is believed that most of them were high pressure. Also, most of the stocks of oilburners held by dealers are high pressure types.

Domestic Conversion Burners

Of the 455,218 burners and units installed last year, 402,261 or 88.4% were shipped as conversion burners. Table 2 shows the annual sales, the value and number of conversion burners operating at the end of each year since 1930. This volume of conversion burners represents an increase of 69% over 1941, and is 68.4% above 1940, the previous record year for conversion burner volume.

Conversion burners operating at the end of the year reached 2,544,130 an increase of 14.2% for the year.

Average retail price of a conversion installation increased more than 18% in 1946, compared with 1945, to $370. Minimum price burners sold for only 0.7% more than in the year before, rising two dollars to $294 average. This reverses the trend of recent years which had narrowed the spread between the minimum price burners and the average for all burners to only $21 in 1945. The spread now has jumped to $76, probably due to more dealers striving for the higher price jobs, and neglecting their "leader" lines. Price in 1946 was secondary to the equipment itself, and most burners were sold in the higher price brackets. Conversion burner price trends, both wholesale and retail, are given in Table 5.

While the average conversion installation increased in price 18.2% during the year, replacement installations increased 28.2% to average $300. This, again, reflects dealers' resistance to using scarce domestic oilburners except where new customers can be created. The price of an oilburner replacement ranged from $254 average on the Pacific Coast to $325 in the Middle Atlantic states. The New England average was $360, and the Middle West got an average of $314 for a replacement. The $300 average replacement price for the country compares with $234 in 1945, $211 in 1944, and $201 in 1943. Last year a replacement cost 81.8% of the new installation price, compared with 74.7% in 1945, 75.4% in 1944, and 72.8% in 1943. It is expected that this high ratio of replacement price to new installation price will drop as soon as equipment is readily available.

Total retail value of all conversion burner installations reached a new high in 1946 of $148,812,500, which is more than 150% up from the 1941 level for conversion installations.

Average factory price of a conversion burner was up 26.6% from 1945 to $119, but minimum price burners at the factory increased only 7.1% to $90. Relatively few low-price burners were offered the trade last year. Even before OPA ceilings were removed it was customary to alter the design of the burner in some way to make a new model of it, and get a new price. When ceilings were removed late in the year all low price equipment was increased. Factory value of all conversion burners sold last year totalled $47,840,900, or more than 148% increase over the 1941 level.

Wholesale and retail price increases in 1946 where not confined to any particular type of conversion burner. The sharpest increase was in vaporizing equipment used for conversion installation. In many areas there was little difference in installed price for the four most common types of conversion burner. However, relatively few of the vaporizing burners shipped from factories were installed by dealers as conversions. The following table shows the average retail and wholesale prices of conversion burners in 1946 and 1945.

Retail			*Wholesale*	
1946	*1945*		*1946*	*1945*
$367	$305	High Press.	$113	$ 90
398	381	Low Press.	135	120
395	362	Vert. Rotary	144	123
319	215	Vaporizing	90	65

The general scarcity of complete boiler and furnace units during the year forced up the percentage of conversion burner value in the total. The $148,812,500 retail value of conversion burners last year represented 79.9% of the $186,299,500 total, against 70% in 1945. Factory value

Table 5. Conversion Burner Price Trends

Retail					*Factory*			
Average	*% change prev. yr.*	*Aver. Min.*	*% change prev. yr.*		*Average*	*% change prev. yr.*	*Aver. Min.*	*% change prev. yr.*
$692	..	$554	..	1929	$240	..	..	..
629	— 9.1	516	— 6.8	1930	195	—18.7	..	..
495	—21.3	413	—19.9	1931	160	—18.0	..	..
438	—11.5	371	—10.1	1932	140	—12.5	..	..
395	— 9.8	341	— 8.1	1933	129	— 7.8	$109	..
341	—13.6	310	— 9.0	1934	118	— 8.5	99	— 9.1
317	— 7.0	275	—11.2	1935	98	—16.9	88	—11.1
300	— 5.3	266	— 3.2	1936	94	— 4.1	85	— 3.4
293	— 2.3	255	— 2.6	1937	86	— 8.5	82	— 3.5
263	—10.2	236	— 7.4	1938	79	— 8.1	76	— 7.3
240	— 8.7	218	— 7.6	1939	78	— 1.3	69	— 9.2
233	— 2.9	210	— 3.7	1940	76	— 2.6	63	— 8.7
250	+ 7.2	226	+ 7.6	1941	81	+ 6.9	65	+ 3.2
267	+ 6.8	245	+ 8.4	1942	85	+ 4.9	73	+12.3
276	+ 3.3	247	+ 0.9	1943	86	+ 1.2	76	+ 4.1
280	+ 1.4	258	+ 4.7	1944	98	+13.9	78	+ 2.6
313	+11.8	292	+13.2	1945	94	— 4.1	84	+ 7.7
370	+18.2	294	+ 0.7	1946	119	+26.6	90	+ 7.1

of conversion burners this year was 71.8% of the wholesale value of all burners and units, against 63% in the year before.

Complete Boiler-Burner Units

There were 23,309 complete, factory-assembled boiler-burner units installed last year, representing an increase of 158.2% over the 9,027 boiler units installed in 1945. However, boiler units used in 1946 accounted for only 5.1% of the total oilheating equipment installed, contrasted with 6.2% in 1945.

Complete boiler units in operation at the end of the year were up to 197,310, an increase of 12.6% for the year. Annual sales, wholesale and retail values and the number of integral boiler units operating at the end of each year since 1932 are presented in Table 3.

Only 2.9% of the factory-built oilfired boiler units last year were cast iron, and this volume (687) accounted for less than 0.3% of the oilfired cast iron boilers installed. This compares with 15% of factory boiler units cast iron in 1945, representing 6.7% of the total oilfired cast iron boilers installed. There were 22,622 integral steel boiler units installed, slightly more than 97% of the total boiler units, and about 67% of all oilfired steel boilers installed during the year.

Retail prices of complete boiler-burner units averaged $770 for the year, up 16.1% from 1945 for the largest increase since records have been kept. Minimum price units were up 9.3% to $589, though few were available.

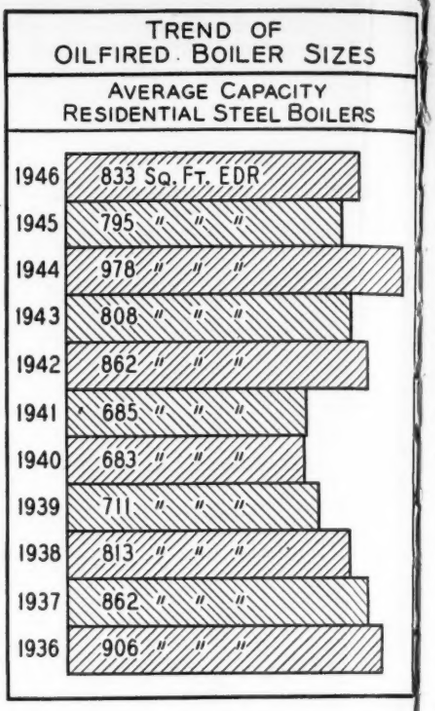
Factory prices of all boiler units jumped 45.2% to average $401, while the minimum prices were up 14.6% to $267. Minimum prices at the factory in 1946 were up to within $9 or 3% of the average for all boiler units in the year before. Records for past years on wholesale and retail prices of boiler-burner units are shown in Table 6.

Retail value of complete boiler units was up slightly more than 200% in 1946 to $17,956,100, but wholesale value increased 275% over 1945 to $9,342,700. The relatively small volume of boiler units in the record oilheating year kept both retail and factory value below the 1941 level. In 1946 the retail value of boiler units was only 9.6% of the total for all products, against 19.3% in 1941. Factory value of boiler units last year was 14% of total wholesale equipment values, contrasted with 23.2% in 1941.

Factory-built boiler units represented less than 40% of the total new boilers installed with oilburners. There were 35,188 oilfired boiler units assembled by dealers in the field, using new boilers and conversion burners. Boilers, however, were hard to find in 1946. Units dealers assembled last year accounted for only 7.7% of the total oilheating installations. This compares with 22,040 dealer-assembled boiler units in 1945, or 15.1% of the whole, and 29.8% in 1944. The following table gives a breakdown of dealer-assembled boiler units by type of boiler used in the last five years.

Cast Iron		*Steel*	*Total*
7,039	1942	1,651	8,690
2,240	1943	595	2,835
13,377	1944	1,491	14,868
18,734	1945	3,306	22,040
24,033	1946	11,155	35,188

Cast iron boilers represented 68.3% of the units dealers assembled in the field last year, compared with 85% in 1945, and 90% in 1944. Cast iron boilers were hard to find, and though steel boilers were not plentiful, they were in easier supply than cast iron.



Total Boiler Sales

Sales of all boilers last year totalled 120,630, of which 71.1% were cast iron. This compares with 80.7% cast iron in 1945, and 95.8% cast iron in 1944. In the last five prewar years cast iron boilers were 87.9% of the total. Total boiler sales for the year were up 45.8% over 1945, but cast iron boilers increased only 28.6%

Table 7. Heating Boiler Sales

	Total Output	*No. for oil*	*% for oil*
CAST IRON			
1935	160,105	29,310	18.3
1936	186,560	41,922	22.5
1937	169,707	58,462	34.2
1938	135,282	54,139	40.0
1939	146,919	61,070	41.6
1940	168,839	77,764	46.1
1941	178,076	80,176	45.0
1942	111,875	10,765	9.6
1943	81,500	8,852	10.9
1944	75,760	19,140	25.3
1945	66,740	20,088	30.1
1946	85,810	24,720	28.8
STEEL			
1935	14,415	14,181	98.1
1936	19,242	18,622	96.8
1937	16,569	15,321	92.7
1938	19,098	17,218	90.3
1939	23,658	21,857	92.4
1940	24,580	23,206	94.5
1941	25,666	24,173	94.2
1942	13,000	7,238	55.7
1943	3,550	1,230	34.7
1944	3,310	2,168	65.5
1945	16,008	10,979	68.6
1946	34,820	33,777	97.0

TABLE 3

INTEGRAL BOILER-BURNER UNITS

Sales	*Retail Value*	*Factory Value*	*Year*	*No. in Use (End of Year)*
3,000	.....	.....	1932	3,800
7,800	.....	.....	1933	11,600
9,300	.....	.....	1934	20,890
10,510	$9,511,600	.....	1935	31,400
15,025	9,781,300	.....	1936	46,250
14,430	8,557,000	$3,795,100	1937	60,240
14,220	7,877,900	3,711,400	1938	73,930
19,220	9,744,500	4,286,100	1939	92,540
26,955	13,322,700	5,005,300	1940	118,560
39,990	21,874,500	9,717,600	1941	155,720
9,313	5,289,800	2,877,700	1942	163,040
6,637	1,705,600	2,090,600	1943	164,240
6,440	3,909,100	2,002,800	1944	167,040
9,027	5,984,900	2,491,500	1945	175,165
23,309	17,956,100	9,342,700	1946	197,310

Table 6. Prices of Factory-Assembled Boiler-Burner Units

Average	% change prev. yr.		Aver. Min.	% change prev. yr.
		RETAIL		
$905	...	1935	$723	...
651	—28.0	1936	566	—21.7
593	— 8.9	1937	516	— 8.8
554	— 6.5	1938	482	— 6.6
507	— 8.3	1939	441	— 8.5
495	— 2.4	1940	365	—17.2
547	+11.5	1941	378	+ 3.6
568	+ 3.8	1942	473	+25.1
533	— 6.2	1943	361	—23.7
607	+13.9	1944	450	+24.6
663	+ 9.2	1945	539	+19.8
770	+16.1	1946	589	+ 9.3
		FACTORY		
$263	...	1937	$246	...
261	— 0.7	1938	244	— 0.8
223	—14.5	1939	208	—14.7
215	— 3.6	1940	183	—12.0
243	+13.0	1941	201	+ 9.9
309	+27.1	1942	229	+13.4
315	+ 2.0	1943	231	+ 1.0
311	— 1.3	1944	216	— 6.5
276	—11.2	1945	233	+ 7.9
401	+45.2	1946	267	+14.6

Total oilfired boilers installed in 1946 amounted to 58,497, or 48.5% of all boilers. This compares with 31,067 oilfired boilers in 1945, which were 37.5% of the total boiler sales for that year, and 27% in 1944. Cast iron boilers for oilfiring in 1946 represented 28.8% of all cast iron boilers sold, against 30.1% in 1945. The prewar average was 43% of cast iron boilers were for oilfiring.

Though total steel boiler sales increased 54% over 1945 to 34,820, steel boilers for oilfiring increased 67.5% to 33,777, a new high since 1935 when records first were kept.

The average size of oilfired steel boilers increased about 5% during the year to 833 sq. ft. E.D.R. A comparison of average steel boiler sizes, and indication of the size of the average oilfired installation during the year, is shown in the accompanying chart. Figures on steel and cast iron boiler sales each year since 1935 are shown in Table 7.

Complete Furnace-Burner Units

Complete, factory-built furnace-burner unit sales totalled 29,648 in 1946, up more than 43% over 1945. Warm air units operating at the end of the year had reached 195,405, for an increase of 16.3% over the year before, as shown in Table 4.

Furnace-burner units in 1946 represented 6.5% of the total oilheating equipment installed, compared with 11.6% in 1945, 11% in 1944 and 16.3% in 1943. Supplies of oilfired warm air units was short during the year, in spite of priorities aimed at speeding shipment for housing needs.

The average price of a complete warm air unit at retail in 1946 increased 24.1%, though the factory price was up nearly 31%. Minimum price units at retail were up 9.8% while the wholesale price increased 10.9%, as shown in Table 8. Prices for the lowest cost units to the dealer increased in 1946 to well above

Table 8. Price Trends of Factory-Assembled Forced-Air Units

Average	% change prev. yr.		Aver. Min.	% change prev. yr.
		RETAIL		
$774	...	1935	$642	...
662	—14.4	1936	576	—10.2
573	—13.4	1937	499	—13.3
553	— 3.5	1938	481	— 3.4
519	— 6.2	1939	402	—16.4
525	+ 1.2	1940	360	—10.4
582	+10.9	1941	402	+11.7
611	+ 4.9	1942	413	+ 2.7
613	+ 0.3	1943	418	+ 1.2
621	+ 1.3	1944	434	+ 3.8
531	—14.5	1945	479	+10.4
659	+24.1	1946	526	+ 9.8
		FACTORY		
$223	...	1937	$210	...
215	— 3.6	1938	204	— 2.8
205	— 4.7	1939	198	— 2.9
210	+ 2.4	1940	196	— 2.0
234	+11.4	1941	201	+ 2.5
275	+17.5	1942	236	+17.4
276	+ 0.4	1943	241	+ 2.1
262	— 5.1	1944	217	— 9.9
243	— 7.3	1945	239	+10.1
318	+30.9	1946	265	+10.9

the average for all units in the year before, and retail prices for the small units were within 1% of the average for all oilfired warm air units in 1945.

Retail value of complete warm air units was up 117.8% compared with 1945 to $19,530,900, which represents 10.5% of the total retail value of all oilheating equipment installed during 1946. This compares with $8,968,100, or 18.2% of the total retail value in 1945.

Factory value of complete furnace units was up 130.1% to $9,441,700, or 14.2% of the wholesale value of all equipment. This compares with the 1945 level of 23% of total oilheating equipment value in complete warm air units. A summary of annual sales, values and units operating at the end of each year since 1935 is given in Table 4.

In addition to the factory-built warm air units shipped last year, dealers assembled 35,640 units using oil-designed furnaces with conversion burners, up sharply from the 3,898 dealer-assembled warm air units in 1945. Of these units 99.5% were steel. The following table presents a break-down of warm air units by type and construction installed in 1946.

Factory Assembled			Dealer Assembled	
Cast Iron	Steel		Cast Iron	Steel
124	27,715	Forced	151	33,318
16	1,793	Gravity	14	2,157

In both factory- and dealer-assembled units, the majority of oilfired furnaces were steel forced air type. Dealer-assembled units in the past have been heavily gravity units.

Table 9. Warm Air Furnace Shipments

1946 Cast Iron	1946 Steel		1945 Cast Iron	1945 Steel
		FORCED AIR		
3,263	14,186	Coal	4,250	18,350
28,750	114,284	Gas	9,260	29,150
275	61,033	Oil	935	15,755
32,288	189,503	Total	14,445	63,255
		GRAVITY		
147,981	222,899	Coal	117,650	146,960
7,759	56,894	Gas	2,740	16,850
30	3,950	Oil	1,144	2,953
155,770	283,743	Total	121,534	166,763

Table 9 gives a break-down of the 661,304 warm air furnaces sold for all fuels in 1946 by type of fuel and material of construction. Figures for 1945 are given

TABLE 4

INTEGRAL FURNACE-BURNER UNITS

Sales	Retail Value	Factory Value	Year	No. in Use (End of Year)
3,175	$2,457,400	.....	1935	5,600
7,620	5,044,400	.....	1936	13,120
11,390	6,526,500	$2,540,000	1937	24,010
11,290	6,243,400	2,427,300	1938	34,140
16,900	8,771,100	3,464,500	1939	49,850
36,410	19,115,300	7,646,100	1940	82,960
55,295	32,181,700	12,939,000	1941	133,180
18,543	8,029,100	5,099,300	1942	149,990
5,446	1,691,900	1,503,200	1943	150,750
5,590	3,471,400	1,464,600	1944	152,780
16,889	8,968,100	4,104,000	1945	167,980
29,648	19,530,900	9,441,700	1946	195,405

for comparison. Forced air steel furnaces in 1946 totalled 189,503, or 28.6%; steel gravity, 283,743, or 42.9%; forced air cast iron, 32,288, or 4.9%; and cast iron gravity, 155,770, or 23.6%. The 65,288 warm air furnaces sold for oilfiring represent 9.9% of the 661,304 total furnaces sold in 1946, compared with 20,787 oilfired warm air furnaces out of a total of 365,997 furnaces of all types, amounting to only 5.7% oilfired in 1945.

Commercial Oilburner Sales

Commercial and industrial oilburner shipments reached 38,247 during the year, an increase of 8.8% over the 30,900 heavy oil burners used in 1945. Only 15,012 of these heavy oil burners, slightly less than 40%, were used for commercial heating. An additional 25,486 burners using light oil also were used for commercial heating, making the commercial heating total 40,498, or 32.7% more than the 30,515 commercial heating jobs installed in 1945.

Table 11. Commercial Oilheating

Sales		*No. Operating (End of year)*
14,990	1935	176,240
18,435	1936	192,830
19,380	1937	210,275
13,955	1938	222,880
16,445	1939	237,680
20,710	1940	256,320
34,750	1941	287,595
55,360	1942	293,120
44,470	1943	285,045
30,705	1944	320,680
30,515	1945	345,090
40,498	1946	383,560

Horizontal rotary equipment accounted for 12,893 of the 38,247 heavy oil burners, or 33.7%. High pressure burners for heavy oil totalled 13,323, or 34.8%, and there were 12,031, or 31.5%, low pressure burners for heavy oil. Less than half the heavy oil burners were for automatic or semi-automatic operation. Manual control was used on 21,380 (55.9%) of the heavy oil burners and only 14,300 (37.4%) were fully automatic.

Commercial heating replacements last year required only 2,028 burners, or little more than a third of the replacements made in 1945. This again is evidence of the effort that dealers made to use new burners to make new customers.

Commercial heating installations operating at the end of 1946 totalled 383,560, an increase of 11.2% for the year. Annual sales of oilburners for commercial heating, and the number of commercial burners operating at the end of each of the last twelve years are shown in Table 11.

Other Equipment Sales

Other than strictly oilheating equipment, the industry's dealers also sold 10,011 domestic stokers, or 4.15% of the small stokers sold. Dealers also sold 17,814 domestic gasburners, or 4.9% of the gasheating equipment sold last year. Of this gas equipment, 9,191 were conversion burners, 170 were gasfired boiler units, and 8,453 were furnace-burner units.

The industry also sold two thirds of all the boilers sold last year. In addition to the oilfired boilers, dealers sold 3,077 boilers for other fuels. Of these 2,100 were cast iron and 977 were steel.

Separate warm air furnaces sold by oilheating dealers for other fuels totalled 70,069, which combined with the oilfired furnaces amounted to 20.4% of all the warm air equipment sold. Dealer sales of all types of furnaces totalled 3,856 cast iron forced air, or 11.9% of the total; 16,216 cast iron gravity, or 10.4% of these units; 77,219 steel forced air, or 40.7%, and 38,066 steel gravity furnaces, representing 13.4% of all of that type.

Oilburner dealers also sold 32,235 oilfired space heaters in 1946, but due to inability to get delivery, they were able to install only 19,210, or slightly more than 2% of the total oilfired space heaters delivered. It is estimated that there were 854,700 flue-connected oilfired space heaters installed last year, of which 799,145, or 93.5% were fired with pot type burners, and 55,555 had shell type burners.

Oilfired storage-type waterheaters sold by oilburner dealers totalled 38,162, of which 7,767, or 20.3% were fired with mechanical burners, and 30,395 were vaporizing type. This volume represents 15.4% of the indicated 247,835 storage-type oilfired water heaters installed last year. This compares with 9,480 water heaters dealers sold in 1945, of which nearly 30% were fired with mechanical atomizing burners.

Table 10. Domestic Stokers

Sales	*% change*		*No. in use*	*% change*
11,361	...	1931	20,811	...
11,144	— 1.9	1932	31,955	+53.5
15,618	+32.0	1933	47,573	+48.8
25,510	+73.3	1934	73,083	+53.6
45,194	+77.1	1935	118,277	+61.8
84,421	+86.8	1936	202,698	+71.3
103,378	+22.4	1937	306,076	+51.0
98,907	— 4.3	1938	403,005	+31.6
106,208	+ 7.4	1939	507,412	+25.9
159,533	+48.6	1940	658,970	+29.7
198,243	+24.3	1941	843,313	+28.0
96,420	—51.3	1942	938,315	+11.3
19,040	—80.2	1943	955,450	+ 1.8
32,245	+69.3	1944	984,740	+30.5
119,520	+270.7	1945	1,082,700	+ 9.9
240,652	+101.3	1946	1,217,140	+12.4

Competitive Equipment

Domestic and small commercial stoker installations last year also hit a new high for the industry at 240,652, up 101.3% from 1945. Of these, 227,276, or 94.5% were domestic stokers (Class 1, not more than 60 lbs. per hour) and 13,376 were Class 2 stokers, feeding not more than 100 lbs. of coal per hour. Stokers for bituminous coal in both small and the larger sizes accounted for 229,928, or 95.5% of the total.

Though stoker installations hit on all-time high for the year, more than 96,000 installations were replaced. Oil replaced 31,495 stoker installations, and an indicated 12,037 stoker sales were to replace old stokers. Domestic and small commercial installations operating at the end of the year were up 12.4% to 1,217,140. Figures on stoker sales and number of units operating at the end of each year since 1931 as given in Table 10.

Domestic gasburner installations for central house heating also reached a new high at 366,000, according to estimates by the Gas Appliance Manufacturers' Association, an increase of more than 544% over 1945. Conversion gasburner instal-

Table 12. Domestic Gasburners

Annual Sales

Conversion	*Boiler Units*	*Furnace Units*	*Total*		*No. in Use (End of Year)*
21,687	10,201	56,666	88,554	1940	1,187,486
36,335	15,007	85,043	136,385	1941	1,310,222
6,087	10,966	29,412	46,465	1942	1,352,040
800	3,485	8,970	13,255	1943	1,363,970
3,180	5,217	12,113	20,510	1944	1,382,430
14,183	14,959	27,676	56,818	1945	1,433,570
202,000	27,000	137,000	366,000	1946	1,763,000

lations of 202,000 represented 55.3% of the total, contrasted with about 25% conversion in former years. Shortages of boilers and furnaces hit the gas industry equally as hard as others. Boiler units for gas totalled only 27,000, or 7.4% of the 1946 total, against 26.3% in 1945, and furnace units last year accounted for only 37.4% of the gas total, against 48.7% in the year before.

Gas Totals Revised

Domestic gasheating installations in the country reached 1,763,000 at the end of the year, up 18.7% from the end of 1945. Figures on gasburners operating at the end of recent years, as shown in Table 12, have been revised in the light of more complete information than formerly was available. The table also shows a breakdown of gas sales by type of equipment for the last seven years.

Besides the value of oilheating equipment sold by the industry in 1946, dealers also had a total service income of $35,000,000, making a total retail volume of $221,300,000 on oilheating for the year. This is an increase of nearly 190% over 1945. Service income this last year was only 15.8% of the total, against 33% in 1945. It is estimated that the retail value of distillate heating oil reached $421,200,000, making the total value of oil and domestic equipment $642,500,000. Commercial and industrial oilburners and the value of heavy oil sales are not included in the estimate.

Conclusion

The first full postwar year hardly can be considered a "normal" one, and there are predictions that much of 1947 will be clouded by materials shortages, either of burners, service parts, or installation materials. In some sections oilburner supply in domestic sizes already was noticeably easier at the end of the year, and a few dealers in the larger metropolitan areas were advertising for business in local papers.

The figures show the effect of 1946 shortages on the oilheating business, compared with normal years. Nobody is prepared to predict a normal year in 1947, but most authorities agree that supplies of most materials will be easier, and we may expect it to be the year in which the industry got back on the old, familiar beam.

Oilburner Exports, Jan.-Oct. Incl., 1946

Country	Domestic Oilburners and Units		Industrial Burners and Units		Oilburner Parts—Domestic & Industrial
	Number	Value	Number	Value	Value
NORTH AMERICA					
Greenland	...	$ ...	...	$ ...	$ 170.
Iceland	26	2,243.	3	3,019.	4,150.
Canada	18,770	1,127,148.	2,277	263,404.	$1,063,243.
Newfoundland & Labr.	187	16,310.	20	5,987.	7,013.
Mexico	465	42,301.	515	207,499.	38,358.
Bermuda	1	270.	1	134.	308.
Total N. A.	19,499	$1,188,272.	2,816	$480,043.	$1,113,242.
CENTRAL AMERICA					
Nicaragua	2	$ 49.	...	$ ...	$ ...
Costa Rica	5	709.	10	4,634.	460.
Guatemala	...	...	8	4,206.	922.
British Honduras	...	...	...	...	273.
Honduras	...	...	...	...	30.
Salvador	4	346.	...	...	...
Panama Republic	4	189.	10	4,002.	973.
Panama Canal Zone	...	...	...	...	4,340.
Total C. A.	15	$ 1,293.	28	$ 12,842.	$ 6,998.
WEST INDIES					
Haiti	...	$ ...	...	$ ...	$ 96.
Dom. Republic	...	...	12	6,158.	...
Bahamas	1	2,975.	...	...	56.
Cuba	24	2,832.	148	40,032.	5,931.
Jamaica	...	...	...	...	182.
Windward Islands	...	...	...	...	170.
Barbadoes	...	...	...	...	156.
Trinidad & Tobago	...	...	1	140.	346.
Curacao	...	...	2	190.	6,972.
Total W. I.	25	$ 5,807.	163	$ 46,520.	$ 13,909.
SOUTH AMERICA					
Colombia	26	$ 2,786.	100	$ 27,278.	$ 8,396.
Venezuela	96	8,829.	169	26,810.	15,720.
British Guiana	...	...	...	...	73.
Surinam	1	120.	...	...	...
Ecuador	38	2,072.	25	2,212.	1,420.
Peru	129	1,169.	23	18,373.	691.
Bolivia	3	349.	2	560.	34.
Chile	39	5,159.	19	1,559.	2,944.
Brazil	21	4,483.	107	42,151.	10,594.
Uruguay	134	7,813.	42	19,150.	3,192.
Argentine	55	6,612.	15	6,491.	16,217.
Total S. A.	542	$ 39,392.	502	$144,584.	$ 59,281.
EUROPE					
Sweden	683	$ 90,638.	192	$ 30,885.	$ 18,327.
Norway	215	35,961.	49	12,774.	1,977.
Denmark	...	...	...	...	1,622.
United Kingdom	1	176.	...	...	474.
Netherlands	60	7,620.	62	12,959.	1,356.
Belgium	247	8,978.	...	...	2,337.
France	8	1,193.	2	375.	8,367.
Switzerland	76	6,202.	2	347.	10,952.
Spain	1	104.	...	...	...
Portugal	1	83.	...	...	...
Greece	3	480.	8	5,494.	...
Turkey	26	11,980.	...	...	...
Eire	...	...	2	1,069.	...
Malta	...	...	1	374.	...
Total Europe	1,321	$ 163,415.	318	$ 64,277.	$ 45,412.
ASIA					
Philippine Rep.	...	$ ...	8	$ 3,611.	$ 2,623.
Syria	83	8,039.	...	...	45.
Iran	...	...	1	555.	164.
Palestine	5	250.	26	2,720.	1,521.
Sarab	...	...	...	...	3,264.
British Malay	...	...	...	...	450.
Arabia	2	310.	...	...	69.
Bahrein	...	...	...	...	125.
Netherland Indies	...	...	6	1,210.	195.
India	7	1,972.	3	352.	19,132.
China	2	412.	48	11,353.	4,199.
Total Asia	99	$ 10,983.	92	$ 19,801.	$ 31,787.
SOUTH PACIFIC					
Australia	14	$ 5,000.	...	$ ...	$ ...
New Zealand	35	3,864.	...	...	665.
Total	49	$ 8,864.	...	$ ...	$ 665.
AFRICA					
Egypt	40	$ 4,305.	41	$ 1,723.	$ 1,524.
Belgian Congo	...	...	...	...	43,334.
Union So. Africa	...	80.	2	566.	2,959.
So. Rhodesia	...	...	...	...	502.
I. E. Africa	17	2,555.	...	...	...
Total Africa	58	$ 6,940.	43	$ 2,289.	$ 48,319.
GRAND TOTAL	21,558	$1,424,966.	3,962	$770,356.	$1,319,613.

1946...Profits and Ulcers

Oilheating Reaches Its New Peak Through Unending Obstacles

ANYONE EVEN REMOTELY concerned with the oilheating industry could have told you at any time during 1946 why it was not possible to get or install domestic oilburners in any worthwhile volume. The office receptionist knows that our industry couldn't get fractional motors, because they had been priced too low in the prewar base period, with the obvious result that motor manufacturers would use their sparse supplies of copper to accommodate other industries more profitable to them.

The truck drivers could explain why there were no transformers . . . didn't Phelps-Dodge make more transformer wire than any other copper company and weren't they on strike for eight months and four days out of the year? And who could be so naive as to think the steel companies would roll any sheet stock for oil tanks when they could get far more per ton of plates, due to OPA skulduggery?

What all of these explainers overlooked was that the oilheating industry men had been around during the war and had seen, over and over, that sign on the walls of factories and offices, "The difficult we do immediately; the impossible takes a little longer." And so the dealers installed half again as many home oilburners as in the best previous year, 1941, when there were no such obstacles. But in doing it they grew a crop of stomach ulcers from the ceaseless tension . . . tension from never having all of the necessary things to do the job just right, tension over having to find bits and pieces at exorbitant prices and sending them to their burner factories to be able to get long overdue shipments, tension over raising the permit inspectors' gratuity on jobs that didn't quite match the regulations. Perhaps it was all worth while; some of the dealers liked it.

Asked to comment on the 1947 outlook, one dealer wrote, "Give us more of what we've got, headaches and all." Which brings up the point that, collectively, oilheating dealers throughout the nation expect 1947 to be a much bigger year for burner installations than 1946 . . . 137% bigger. There is little prospect of the industry being able to get materials to make that many more burners even though the dealers could sell them, unless by chance the 1947 recession that the economists expect in some lines would make more raw materials available to us. It is interesting, in any event, to realize that our crowd wholeheartedly discredits any thought of a slump.

Averages from several hundred reporting dealers, weighted by size of dealer, show that they expect 1947 business to exceed 1946 volume by the amounts shown in the accompanying table.

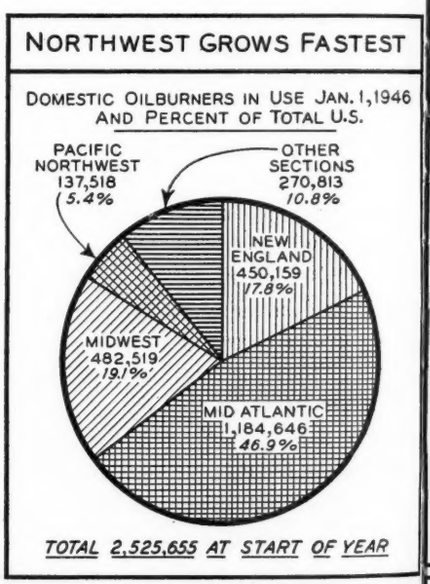
Dealer Outlook for 1947

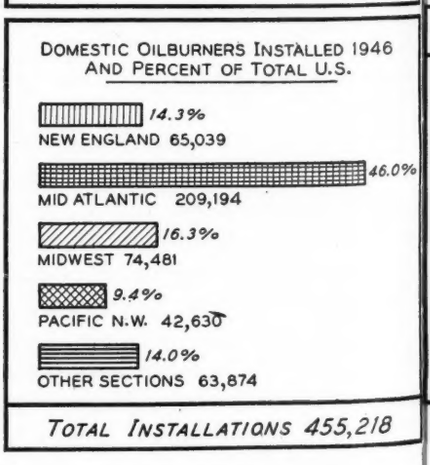
DEALERS IN	EXPECT BUSINESS
New England	112% over 1946
Mid-Atlantic	73% "
Middle West	85% "
Pacific N. W.	267% "
Other Areas	753% "
Total U. S.	137% "

The extremely optimistic predictions in the Pacific Northwest and in "Other Areas," while obviously emotionally high, are not the result of too much New Year's eve refreshment. Dealers in those regions know that the demand for oilheating is going to be very strong. In the Pacific Northwest a third of a million decent houses have been heated with sawdust, which is rapidly disappearing due to new technologies in lumbering. Coal, hauled over the mountains from the East, is high priced; so is manufactured gas, partly made from coal. Nearly everyone wants oilheating sooner or later. In the Pacific Northwest section of the consumer survey on fuel preferences made by FUELOIL & OIL HEAT eighteen months ago, an average of nearly three-fourths of householders would prefer oil heat.

The percentage gain predicted by dealers in "Other Areas," no doubt to some extent facetious, nonetheless reflects a boom psychology that pervades their organizations. Those areas are principally in the Rocky Mountain States and the South, strongholds of coal for generations. Now they are beginning to reflect the widespread departure from coal that is prevalent throughout the country, and while there is a lot of cheap natural gas in some of those states, oilheating is the strong preference in others. Thus, in states where there has been only a relative handful of oilheated homes it is quite reasonable that installations in 1947 could increase seven fold.

It is important to recognize, however, that while oilheating will boom in the Far West and South probably to the ex-


NORTHWEST GROWS FASTEST
DOMESTIC OILBURNERS IN USE JAN. 1, 1946 AND PERCENT OF TOTAL U.S.
PACIFIC NORTHWEST 137,518 5.4%
OTHER SECTIONS 270,813 10.8%
NEW ENGLAND 450,159 17.8%
MIDWEST 482,519 19.1%
MID ATLANTIC 1,184,646 46.9%
TOTAL 2,525,655 AT START OF YEAR



Geographic Shifts in Sales

	Percent of Burners in Use Prewar	Percent of Burners Installed 1946
New England	17.8	14.3
Mid-Atlantic	46.9	46.0
Midwest	19.1	16.3
Pacific N. W.	5.4	9.4
Other Areas	10.8	14.0
Total U. S.	100.0	100.0

tent of maintaining the present seller's market throughout the new year, we must expect the opposite to be true in the East and Midwest. Although strong gains are not improbable in those areas, they will come as a result of a return to hard, practical selling, with most industry men expecting that the second half of the year will bring a buyer's market.

It was not possible in 1946 to see clearly the relative strength of oilburner demand between the various parts of the country, primarily because there were never enough burners in any section to please everyone, with the result that burner factories to a considerable extent followed their prewar distribution pattern by giving the dealers burners in ratio to their 1941 purchases. Yet there was some shift from the prewar pattern, as the table shows.

Dealers specializing in oilburners and/or fueloil continued to dominate the industry pattern, the two groups accounting for 71% of all new oilburner installations and 75% of all burner service rendered. In previous January issues, dealers have sometimes been compared on the basis of their original business, regardless of what proportion of industry products they now sell. This year the comparison is made on the basis of their 1946 activity only, regardless of their origin. Companies were asked which product accounted for their largest dollar volume in 1946; this would in most instances also represent their primary business interest.

Companies whose largest 1946 dollar volume was in oilburner sales accounted for 41% of the Nation's total burner installations, those whose largest dollar volume was in the general heating business sold and installed 4.6% of all oilburners, those whose largest dollar volume was in coal sold 7.3% of all oilburners, etc. The table tells the full story and shows considerable divergence in the percentages, by regions. It also shows the per cent of total oilburner service rendered by each type of company.

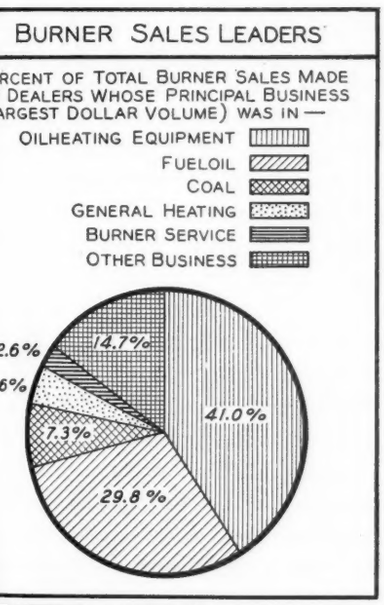
Dealers classified in the table as having largest dollar volume in "Other Business" were principally in general appliances, gasoline, airconditioning, insulation or hardware.

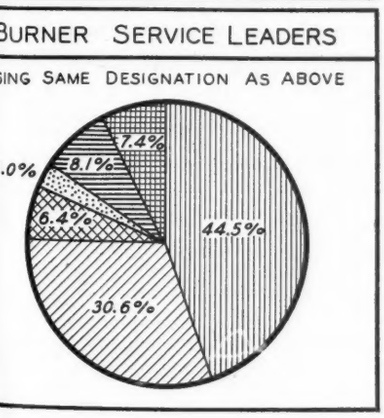
Oilheating dealers continued to take little active interest in the sale of stokers and gas burners, as clearly shown in the chart. True, 22% of them sell stokers and 24% sell gas burners, but the total number of these competitive fuel equipment items that they sold was so small in relation to their oilburner sales as to make clear the fact that they took on these other lines principally to be able to show to prospects an unbiased interest in all fuels . . . and having proved that point, sell them an oilburner.

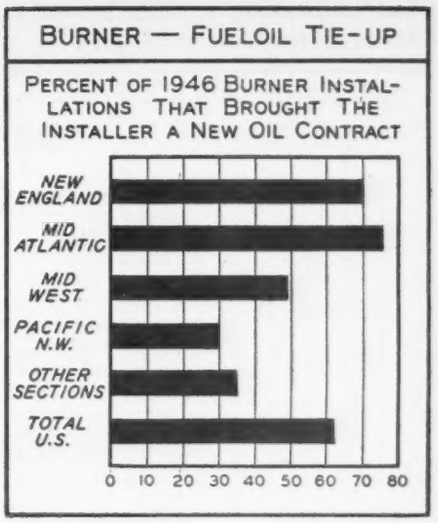
The fact that most of these dealers are strongly partisan in favor of oil, as between fuels, is seen by the discovery that 62% of all domestic oilburners installed in 1946 brought to the dealer a contract to supply oil, a highly desirable business, for with proper treatment of the customer this revenue will continue for years. When it is noted that an additional 8% of burners installed last year replaced old oilburners, with no new oil contract involved, it becomes apparent that only around 30% of the new burners were installed by companies not selling fueloil.

Throughout 1946 there was considerable discussion of the very large backlog of unfilled orders from dealers on the books of oilburner manufacturers. As this backlog approached the one million point, it became obvious that there had been a lot of excessive and duplicate ordering in the hope of getting a few burners from each of several plants. All of the dealers participating in this study were asked how many burners they had on order with factories at the first of December. Nearly half of the dealers have ordered more burners than they can reasonably expect to get within two years. The table shows how their present factory orders compare with their actual installations in 1946.

BURNERS ON ORDER AS PER CENT OF 1946 INSTALLATIONS	Per Cent of Dealers
Under 100% of 1946	28%
100-200% of 1946	33
200-500% of 1946	24
Over 500% of 1946	15

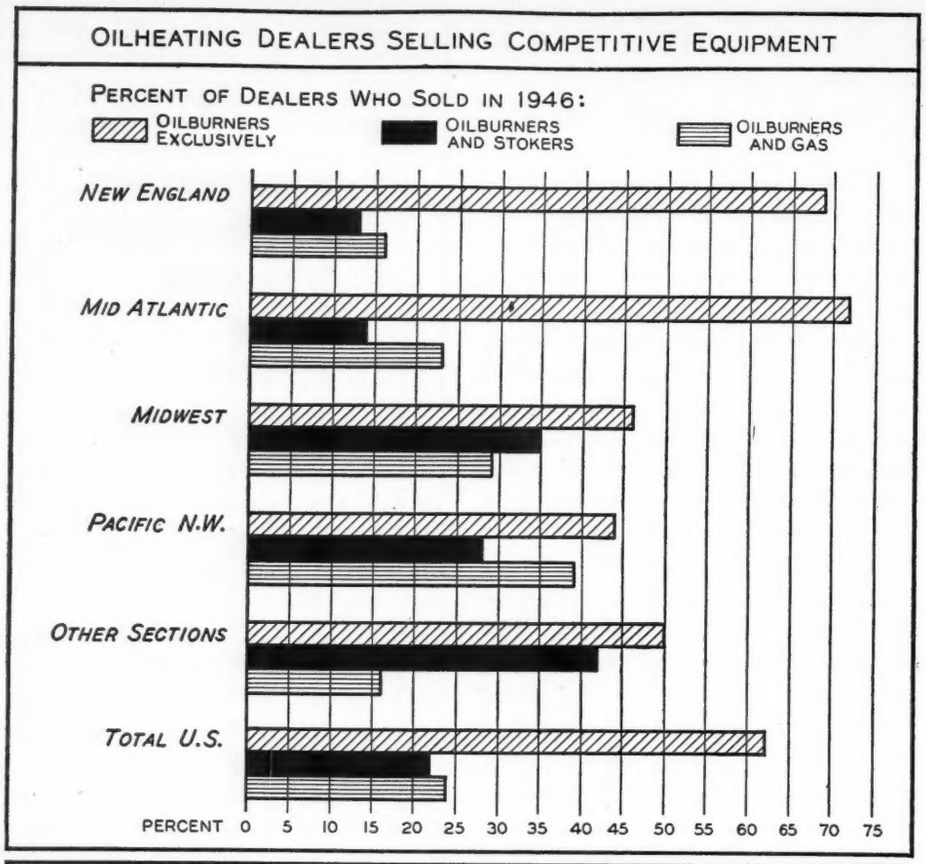


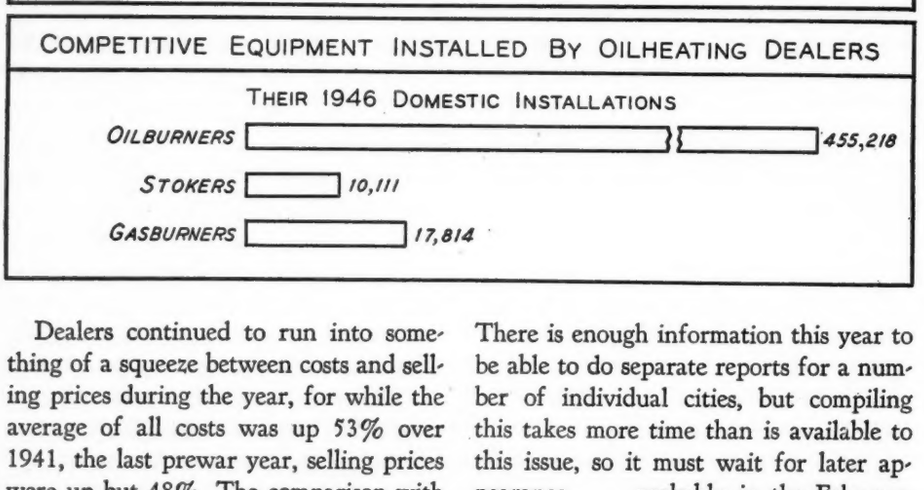



BURNER — FUELOIL TIE-UP
PERCENT OF 1946 BURNER INSTALLATIONS THAT BROUGHT THE INSTALLER A NEW OIL CONTRACT
NEW ENGLAND
MID ATLANTIC
MID WEST
PACIFIC N.W.
OTHER SECTIONS
TOTAL U.S.
0 10 20 30 40 50 60 70 80

Importance of Various Types of Dealers to Burner Sales and Burner Service

Dealers Whose Largest Dollar Volume Was In:	Sold This Per Cent of Total — OILBURNERS						— BURNER SERVICE					
	New Eng.	Mid-Atl.	Mid-West	Pac. N.W.	Oth. Sec.	U.S. Avg.	New Eng.	Mid-Atl.	Mid-West	Pac. N.W.	Oth. Sec.	U.S. Avg.
Oilburners	24.6	41.6	47.6	61.0	29.0	41.0	28.8	39.9	61.6	65.0	17.3	44.5
Fueloil	27.4	43.8	17.6	5.3	36.4	29.8	26.3	45.5	18.4	10.9	28.8	30.6
Coal	16.5	4.3	5.9	..	1.3	7.3	13.7	4.5	7.6	..	..	6.4
General Heating	2.7	2,6	8.6	5.1	6.9	4.6	0.5	1.6	7.0	..	10.1	3.0
Burner Service	2.9	1.7	..	2.9	7.8	2.6	15.8	4.4	..	24.1	14.4	8.1
Other Business	25.9	6.0	20.3	25.7	18.6	14.7	15.9	4.1	5.4	..	29.4	7.4


OILHEATING DEALERS SELLING COMPETITIVE EQUIPMENT
PERCENT OF DEALERS WHO SOLD IN 1946:
OILBURNERS EXCLUSIVELY
OILBURNERS AND STOKERS
OILBURNERS AND GAS
NEW ENGLAND
MID ATLANTIC
MIDWEST
PACIFIC N.W.
OTHER SECTIONS
TOTAL U.S.
PERCENT 0 5 10 15 20 25 30 35 40 45 50 55 60 65 70 75



Dealers continued to run into something of a squeeze between costs and selling prices during the year, for while the average of all costs was up 53% over 1941, the last prewar year, selling prices were up but 48%. The comparison with 1945 shows that the average sale price for a conversion burner, countrywide, went up from $313 to $370, but the average gross profit, after primary costs, increased only $2, from $98 to $100. There was a fairly good net profit, however, in the average sale, for sales expenses were lower than prewar, and overhead expenses were spread over a larger than normal number of sales.

City Reports to Come

The costs and selling prices shown in the table are averages for rather large regions, but it is well known that within the regions some individual markets had substantially higher costs and prices. There is enough information this year to be able to do separate reports for a number of individual cities, but compiling this takes more time than is available to this issue, so it must wait for later appearance . . . probably in the February number. The methods of figuring costs for installation materials and installation labor varies considerably between dealers and between markets, so while these items are reported just as given, some dealers include in materials some items that others include in labor. By combining the two you get a more accurate picture.

Recognizing that burners were in so great demand throughout the year, it speaks well for the sound policies and management capabilities of the oilheating industry that average prices went no higher. We all heard of individual instances of profiteering, racketeering, or call them what you like, particularly in the large Eastern cities, but most fortunately for our industry's future the short-sighted men indulging in these practices represent a small part of the market.

Installment sales started to come back in a small way, accounting for 21% of all sales, compared to 18% in 1945 and to 40% in 1941. Burners sold for cash were, thus, 79% in 1946, 82% in 1945 and 60% in 1941.

Heating Plant Trends

Partially due to the greatly increased volume in 1946 over 1945, plus the fact that a smaller share of total oilburners were installed in the East, warm air showed gains over boiler heating among new oilheating jobs. The 1945 ratio had been 33% warm air to 67% boiler; in 1946 it was 41% warm air to 59% steam and hot water systems. The small new homes accounted for some of this shift, for they are almost exclusively heated with warm air, for reasons of economy in the initial installation.

It is unlikely that warm air oilheating jobs will equal boiler jobs in number in the early future, because of oil's strength in the East, traditional boiler bailiwick, but as new homes come to represent more of our total installations it is clear that the trend will continue somewhat in its present direction. For that reason, it is interesting to learn how oilheating dealers are prepared to take care of the duct work that these jobs often require. The table shows that just one-fourth of present dealers have their own sheet metal shops, compared with 21% a year ago.

Burner Installations by Months

	1946	Prewar Average
January	3.8%	4.3%
February	3.8	3.6
March	3.8	5.3
April	5.8	6.5
May	7.2	6.7
June	7.4	7.1
July	8.9	8.7
August	12.1	11.5
September	12.3	17.2
October	12,3	16.2
November	11.7	8.0
December	10.9	4.9

How Oilheating Dealers Handle Duct Work

	Own Shop	Buy Prefab.	Farm Out
New England	12%	18%	70%
Middle Atlantic	23	29	48
Midwest	31	13	56
Pacific Northwest	30	20	50
Other Sections	56	11	33
Total	25	21	54

Another 21% now buys and installs prefabricated ductwork, compared with 26% in 1945; 54% now farm out (subcontract) all duct work, against 53% in 1945.

In the earlier portion of this issue it was seen that 53,492 oilburners went into new homes in 1946. An accompanying table shows how these were divided as to types of burners in various sections of the country. Note that these were actual installations, not simply orders. The Government agencies show a much larger total of oilheating in new homes authorized during the year. Most of these had not reached the burner installation stage by the end of the year, and will swell the 1947 totals of oilheating for G. I.'s.

4,600 Salesmen in 1946

Salesmen were coming back into the burner business in considerable numbers as 1946 progressed, reaching a total of about 4,600 men by December. The companies employing salesmen did about two-thirds of the industry's total business during the year, with the remaining one-third sold by proprietors, service men and other non-sales types. The table shows a division of salesmen by types of compensation in each area, average commission rates and average sales per man. Not shown in the table, but of interest in connection with it, is the discovery that the average straight commission man sold 62 burners, the average straight salary man sold 73 and the combination salary and commission man sold 63. This is an indication that salaried men are as a rule better established than the others.

We saw previously that the average conversion burner sale, without extras, was $370. The average total sale, including hot water hookups, accessories, perhaps a boiler or furnace, was upward of $500, with salesmen's commission a little more than $50. Considering average sales of 62 burners, commission men made more than $3,000 and not all of them worked all year.

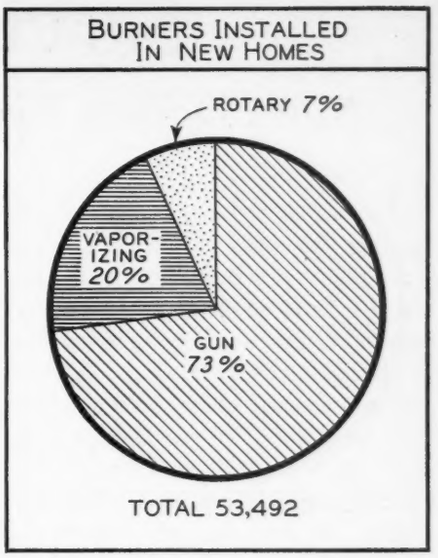
The average oilburner dealer spent in 1946 for local advertising $432, compared with $409 in 1945. Thus, his ratio of advertising to sales was greatly different because his sales were so much higher in '46. The principal change in types of local advertising was greater use of billboards than during the war years by several of the larger companies.

Oilburners Installed In New Homes

	Vaporizing	Gun	Rotary	Total
New Eng.	2,809	10,639	388	13,836
Mid. Atl.	2,372	15,326	1,272	18,970
Midwest	1,568	5,600	788	7,956
Pac. N. W.	2,908	5,144	..	8,052
Oth. Sec.	2,244	1,651	783	4,678
U.S. Total	11,901	38,360	3,231	53,492

Type of Heating Plants That Got Oilburners, 1946

	Steam	Hot Water	Gravity Air	Forced Air
New Eng.	44%	29%	17%	10%
Mid. Atl.	36	42	13	9
Midwest	14	24	37	25
Pac. N. W.	5	7	42	46
Oth. Sec.	29	16	7	48
Total	29	30	23	18

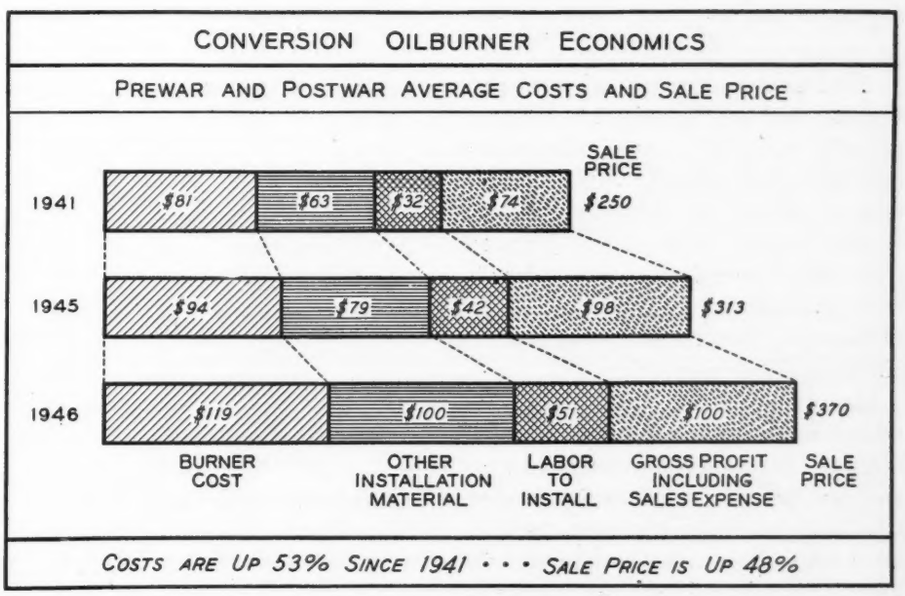


Dealer Advertising Expenditures in 1946

	Per Dealer	Per Burner Instd	Per Service Customer
Newspapers	$126	$1.65	$0.23
Direct Mail	88	1.16	.16
Billboards	101	1.33	.18
Telephone Directory	117	1.54	,21
Total	$432	$5.68	$0.78
Typical dealer, number of customers		76	558

Oilburner Salesmen By Types

	New Eng.	Mid. Atl.	Mid-West	Pac. N. W.	Oth. Sec.	U. S. Total
Per cent of men selling on commission	32	39	37	25	76	38
On Salary	46	34	24	19	..	32
On Salary and commission	22	27	39	56	24	30
Average commission rate	10.4	11.2	10.5	10.0	10.0	10.7
Average sales per man	56	78	52	75	87	67



1946 Installed Cost of Conversion Burner

	New Eng.	Mid Atl.	Mid-West	Pac. N. W.	Oth. Sec.	U. S. Tot.
Paid for Burner	$114	$126	$115	$115	$110	$119
Installation Materials	87	113	82	111	114	100
Labor, including subcontract	47	50	46	72	55	51
Gross profit, including sales expense	95	97	115	85	93	100
Average sale price	343	387	359	383	373	370

Service, an Opportunity

More Dealers Recognize It As A Public Relations Channel

OILBURNER SERVICE, as one of the interesting and active topics for appraisal in the oilheating industry, is encountering a new shift in emphasis as the industry rounds the turn into the real postwar market. Long considered by many dealers as primarily a source of irritation and scant profit possibility, service is now being looked on by a growing number as an opportunity to build consumer relations.

Some of this changed attitude has grown out of recognition that gas companies have stressed excellence of service, with uniformed men, radio-equipped cars, and usually no direct charge. Oilheating customers who have run into hard luck and had to spend upward of $50 for repairs are not only good gas heating prospects, but so are their friends. Asked how they expected 1947 gas competition in their communities to compare with 1946, more than half of the dealers (58%) look for it to be stronger, 28% think it will be about the same and 14% say it will be weaker. These ratios were more or less similar throughout the country.

Gas competition, however, is only one reason for the growing recognition that improved service methods, and policies, are in order for the good of the industry. Satisfied users are the best salesmen any business can have. Investigations have repeatedly shown that considerably more than half of all oilburner sales originate from a satisfied user's recommendation. A few companies have gone so far as to place their service departments under direct supervision of the sales manager, so that every activity can be watched with a view to customer approval.

Customers are not particularly distressed when burners need service, for every mechanical device occasionally does, and few of them mind paying modest charges if the service is prompt, the man clean cut and courteous. In other words, there is no real need for "free" service at any time. Yet, just as important, there is never a need for high service charges to any individual customer, if more practical methods can be devised for spreading total service costs equally, on some sort of insurance basis.

Actually, that is what the gas companies do in most cities. Their "free" service is naturally included in the price of the fuel when the Public Service Commissions approve their rates. Thus, however much of a "lemon" a gas customer may get, his service cost is uniform with more fortunate customers who need no service.

Asked whether they believed it would be possible to adopt a universal service plan for all customers, and set a specific figure that would cover the cost of all necessary service and parts, 67% of the dealers think that it would be feasible and that the cost, with parts, should be $16, as a uniform charge to all. As so frequently happens, however, there was considerable difference of opinion between sections of the country, with the percentage decreasing and the estimated cost rising as you move from East to West. The table tells the story.

Universal Service and Costs

	Percent of Dealers Who Think Feasible	*Estimated Cost, Service & Parts*
New Eng.	80%	$14
Mid-Atl.	71	15
Midwest	67	16
Pac. N. W.	47	23
Oth. Sec.	14	25
U. S. Total	67	16

Repair Parts and Accessories Sold*

	For Each 1,000 Service Customers	*Indicated U. S. 1946 Total*
Motors	15	39,124
Transformers	10	25,812
Burner Pumps	29	74,391
Circulators	3	7,355
Low Water Controls	8	19,552
Burner Controls	30	75,431
Draft Controls	25	62,951
Nozzles	103	259,691
Combustion Chambers	20	51,321
Baffles	6	14,995
Air Filters	60	151,601
Oil Tanks	7	18,367

*Does not include reconditioned items.

Size of company, as expressed by the number of service customers, had some bearing on estimates of cost. Those companies with less than 1,000 service customers stated a cost averaging $17.01; companies with more than 1,000 service customers estimated $15.48, probably because they have had more experience in spreading costs over wide segments of their customer lists. To illustrate this point, in this present study covering several hundred dealers, with their total service customers running well up into six figures, replacement of worn out oil tanks was necessary for only 7/10 of 1% of the customers. Thus, while a tank replacement may cost $55, it represents only 39¢ each when spread over all customers.

It is interesting to note that, while the weighted average estimated cost for universal service, including parts, is $16, the actual average service contract price in 1946 was $15.63. This is seen in the table, "Service Analysis by Regions." Some other items in the table call for comment.

The average expenditure for burner service in 1946 was $12.98, and this of course included parts. But only half of the folks got a summer clean-up and tune-up (the 16% with annual contracts and the 23% who bought the summer clean-up), so that only that half of all customers were sure that they were getting top efficiency from their equipment. Assuming that the summer clean-up charge shown of $6.60 is the right price, we can add an average of half of this, or $3.30 to the $12.98 that was spent, and we find that approximately $16.28 would have given everyone a summer clean-up, emergency service and parts . . . and this includes service department profits.

Service Wage Rates Per Hour

	NON-UNION						UNION					
	Skilled			*Helpers*			*Skilled*			*Helpers*		
	High	*Low*	*Avg.*	*High*	*Low*	*Avg.*	*High*	*Low*	*Avg.*	*High*	*Low*	*Avg.*
New England	2.00	.90	1.33	1.50	.50	.97	1.80	1.50	1.56	1.35	.75	.90
Middle Atlantic	2.45	.95	1.39	1.75	.65	.95	2.00	1.25	1.40	1.75	.65	1.02
Midwest	1.90	.90	1.45	1.50	.60	1.06	2.05	1.50	1.84	1.88	.85	1.24
Pacific Northwest	2.00	1.25	1.72	1.75	1.00	1.26	2.23	1.40	1.88	1.88	1.30	1.65
Other Sections	1.75	1.50	1.58	1.50	.75	1.13	1.87	1.50	1.64	1.00	1.00	1.13
U. S. Average	2.02	1.10	1.44	1.60	.70	1.02	1.99	1.43	1.60	1.57	.91	1.12

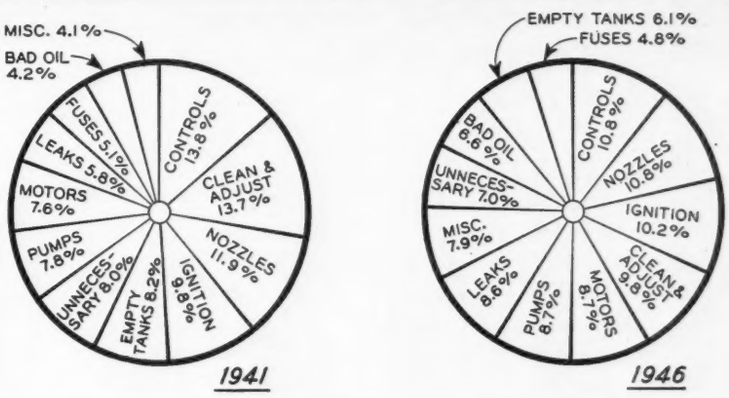
The $12.98 per customer spent for service compares with $11.33 in 1945, a rise of 15%, and up 34% from $8.45 in 1941. Average charge per call, $2.98, was up 7% over the 1945 average of $2.78, and up a third from prewar 1941's average of $2.25.

Service manpower grew in number to the industry's all-time peak. Dealers averaged in December one man to each 162 service customers on the books, compared with 244 in 1941. Of course, more of these men are being used on new installations than ever before. It has never been possible to accurately separate service manpower requirements from installation manpower, other than to note that in 1943 and 1944, when few installations were being made, each service man had to care for 461 and 438 customers, respectively, and did a fair job of it. That would indicate that substantially more than half of present men are on installations, not service.

The average hourly wage of all installation and service men showed no appreciable change from 1945 to 1946. Putting together the averages of union and non-union skilled men and helpers, we find in each year a rate of $1.295. There were minor changes in the groups . . . the skilled non-union average was up from $1.41 to $1.44; the skilled union rate averaged down a cent from $1.61 to $1.60; non-union helpers were up from $0.95 to $1.02; union helpers were down from $1.25 to $1.12 average. This does not mean that union rates were cut, but rather that, among the thousands of new men hired to handle the upsurge, less were paid as much as the earlier, more experienced union men.

The industry average for all mechanics of $1.295 compares with $1.118 for all factory workers, according to the latest Federal Reserve Board index. But whatever the men cost, the most important single consideration for 1947 is that they be high type men, the kind that are a credit to the reputation of the oilheating industry, the kind that cause customers to tell their friends that oilheating is best. If 1947 can see the start of many more universal service plans to eliminate excessive charges to anyone, and see service manpower turned more in the direction of improving public relations, it will be a highly significant year to the industry's progress.

CAUSES OF SERVICE CALLS ; PREWAR AND 1946

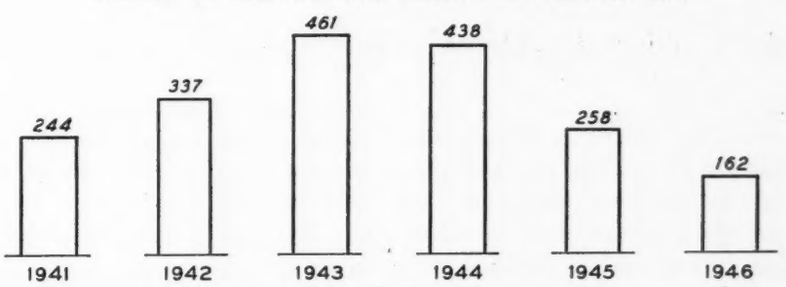


Service Analysis by Regions

	New Eng.	*Mid-Atl.*	*Midwest*	*Pac. N. W.*	*Other Sections*	*U. S. Total*
Service Inc. per Dealer	$12,662	$19,663	$11,669	$8,200	$6,433	$14,457
Service Cust. per Dealer, reporting dollar income	881	1,453	914	1,053	446	1,114
Avg. Income per Customer	$14.37	$13.53	$12.76	$7.79	$14.42	$12.98
Minimum Call Charge	$2.75	$3.17	$2.96	$3.03	$2.34	$2.98
Annual Contracts, Percent of Customers	26	22	7	Neg.	Neg.	16
Average Contract Price	$13.39	$17.66	$14.21	Neg.	Neg.	$15.63
Percent Vacuum Cleaned, other than Ann. Contracts	42	25	17	5	5	23
Avg. Vacuum Cln. Charge	$5.56	$6.99	$7.05	$6.69	$5.14	$6.60
Customers per Service Man, December	179	142	171	195	134	162
Percent of Service Free	2	2	3	Neg.	5	2
Service Men's Weekly Inc.	$57	$59	$65	$71	$66	$62
Percent Union Serv. Men	8	18	24	71	23	23

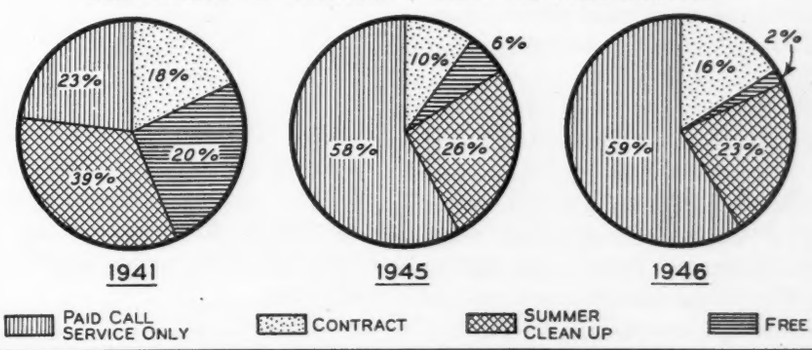
MORE SERVICE MEN THAN PREWAR

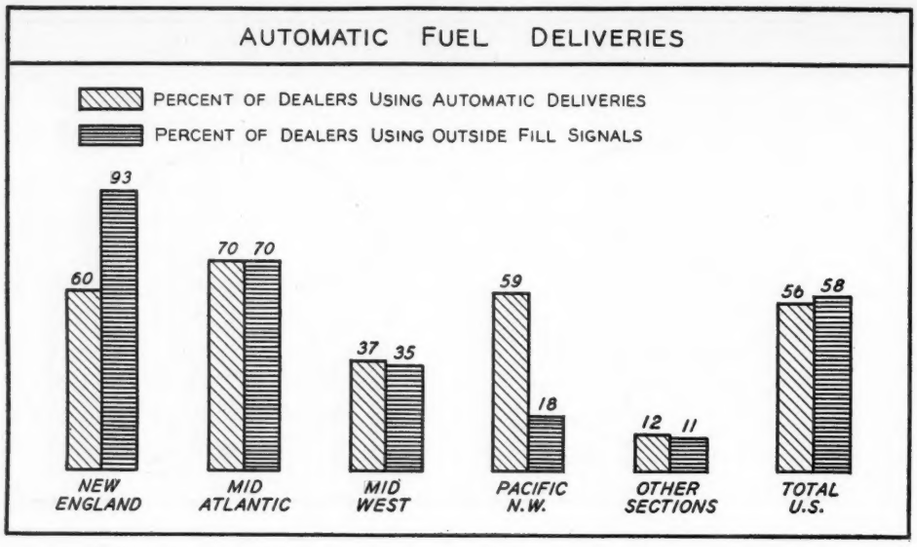
NUMBER OF SERVICE CUSTOMERS PER SERVICE MAN

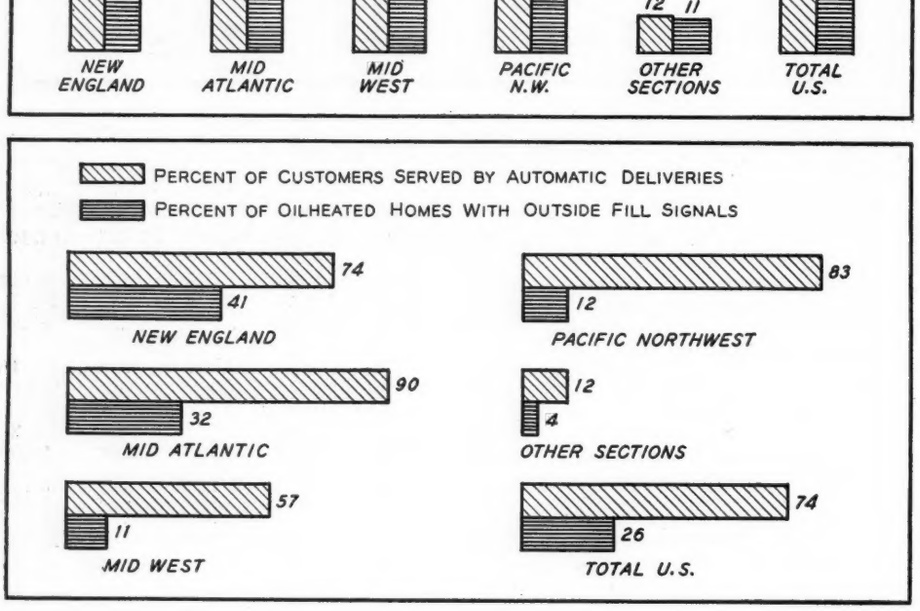


MORE SERVICE CONTRACTS · · · LESS FREE

COMPARISONS OF CONTRACT , CALL AND FREE SERVICE







Fueloil Marketing 1946

War Controls Removed, Industry Expands

OPERATING FIGURES ON FUELOIL distribution for 1946 again are useful for comparative purposes, after four full years in which wartime controls and restrictions had the distributors hamstrung in one way or another every time a measurement was undertaken. True, price controls were in effect during the first half of the year, but these in no way retarded sales expansion, nor did they seriously interfere with fueloil distribution practices.

About the only way in which 1946 operations were restrained was through lack of necessary new equipment. Sales volume expanded rapidly during the year under the impetus of nearly a half million new oilburner installations, plus the fact that 1946 for the first time since 1941 had no rationing or supply control. The large table, "1946 Fueloil Marketing Data," shows that the average distillate heating customer used in 1946, 1,830 gallons, which is 6.4% more than the 1,720 gallons he used in 1945. The difference would have been greater except for the extraordinarily mild fall season in 1946.

In the Middle Atlantic states consumption per customer was 10.7% above 1945, indicating perhaps that the ration cut of war years had been somewhat sharper there. Kerosene consumption in the New England and Middle Atlantic states continued to show the high average figures first evident in 1945, and primarily reflecting the fact that an increased amount of kerosene is being used in central heating plants in markets where distillates are extra heavy.

A number of items in the table are of interest in this first post-control year. Most distillate fuels being sold by independent distributors reach their bulk plants by truck transport. The table shows that 39% of product is handled in this way, as compared to 31% arriving by water and 30% by rail. The high water delivery percentage, of course, reflects the fact that water delivery makes fueloil cheaper and hence the largest oilheating markets have grown up where water transportation is available. The average bulk plant receiving shipments by water is twice the size of other bulk plants, as seen by the fact that they represent only one-sixth of all bulk plants in number, but do a third of the business.

16% More Oilburners

Average sales of distillate per dealer reporting in this study was 1,142,000 gallons, compared with an average of 953,000 gallons last year. This indicates an increase of 19.8% in sales volume, but we know that the actual increase was less than that, which means that the dealers reporting this year were of slightly larger size than those dealers reporting last year. There is no way to check, as yet, the actual national increase in distillate fueloil sales, but we do know that the number of domestic oilburners in use at the end of 1946 was 16% above the number in use a year earlier. From present indications and from dealer estimates of what they can see in their markets, the gain in 1947 will be even greater.

The figures showing average number of customers per dealer bring out one interesting point: the average fueloil distributor in the Pacific Northwest is larger than in any other part of the country. This has been true in the returns for each of the past several years. The Northwest uses virtually a franchise system for fueloil distribution. There are only seven principal suppliers of product and the distributors tie-in with the suppliers' brands with a more or less exclusive marketing territory. The result is that with oilheating showing rapid growth these companies get big in a hurry.

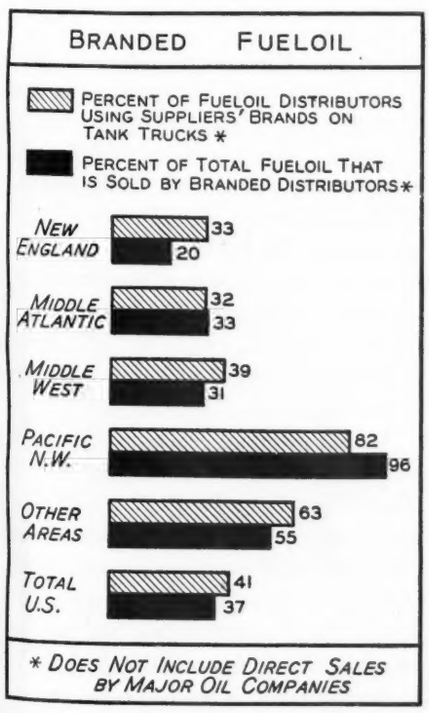
In the study of this large table it is well to point out that the figures do not necessarily have a direct relation to each other; in other words, you cannot divide one figure by another to get a third, appearing in the table. Not all companies engage in all activities and not all report on all items

so each figure stands on its own. It is the correct weighted average of all companies engaging in that activity.

Average miles per truck of 12,626, representing all dealers, is higher than the mileage of the larger companies, those selling over one million gallons. This is probably due to the fact that smaller dealers are inclined to operate their trucks longer hours, and that they have less burdensome labor relations, due to their closer working with employees.

One point with slight improvement this year over last is the average gallons per distillate drop, showing for the whole country 234 gallons, which compares with 229 last year. The best gains occurred in the Midwest and Pacific Northwest, showing, respectively, improvements of 5% and 13%. The industry has come a long way on drop sizes since 1941 when the country's average for distillate heating oil was 186 gallons. Average drop sizes for residual fuel improved in 1946 over 1945 . . . 1,588 gallons against 1,250.

The figure for gallons-per-truck-mile dropped to 27 in 1946 compared to 30 in 1945. It is hard to reconcile this with generally improved operating conditions al-



though some reasons for the change are apparent. With the rapid gain in number of customers (16% in a year) less attention was paid to concentration of accounts and more of them were picked up on the fringe areas. This would not account for the total difference, but it would take further investigation to find the other reasons.

The percent of total customers being served by Degree-Day delivery methods reached a new high point in 1946 with nearly three-fourths of all customers enjoying this facility. The highest concentration of Degree-Day operation is in the Mid-Atlantic states where 90% of customers get this service, supplied by 70% of all dealers in that area. A further delivery refinement, the outside fill signal, is in use in approximately one-fourth of oil-heated homes, principally concentrated in Eastern areas.

One industry subject getting considerable notice and discussion during 1946 was brand selling, or brand identification tie-ups between distributors and their suppliers. Many have believed that such connections were principally held by small operators, whereby they would bolster their stature in a market. The table shows that this is not a primary point, for while 41% of the independent fueloil distributors feature their suppliers' brands on their trucks, these companies sold 37%

1946 Fueloil Marketing Data

	New Eng.	Mid-Atl.	Mid-West	Pac. N. W.	Oth. Sec.	Total U. S.
Percent of bulk plants served by—Water	19	19	5	29	14	16
Rail	47	43	79	12	57	51
Transport	75	82	74	18	71	72
Percent of total product received by—Water	20	50	7	..	40	31
Rail	34	15	43	51	29	30
Transport	46	35	50	49	31	39
Avg. storage cap. (thous. gal.)—Distillate	312	463	114	30	155	287
No. 1, Kerosene	186	164	67	5	118	126
Residual	65	60	99	..	88	74
Percent of dealers selling No. 1, Kerosene	79	59	80	29	50	65
Percent selling Residual	12	24	19	59	48	25
Average sales per dealer (thous. gal.)						
Distillate	1,011	1,361	653	1,878	517	1,142
No. 1, Kerosene	329	199	366	1,404	130	384
Residual	625	837	1,091	1,808	586	943
Average number of customers per dealer						
Distillate, residential	537	696	334	1,509	270	634
Distillate, commercial-apartment	58	105	77	59	20	80
No. 1, Kerosene	407	259	404	1,435	267	443
Residual	76	40	98	104	53	69
Average gallons sold per customer						
Distillate	1,914	1,944	1,849	1,161	..	1,830
No. 1, Kerosene	930	840	628	667	..	785
Residual	14,578	24,721	14,057	17,662	..	19,030
Trucks operated per dealer—Distillate	2.7	3.3	2.4	4.5	4.0	3.1
No. 1, Kerosene	1.6	1.4	1.6	1.8	1.3	1.5
Residual	1.4	1.9	2.5	1.9	2.5	2.0
All types	3.9	3.9	4.1	5.8	5.8	4.2
Customers per truck—Distillate	177	247	157	325	..	217
No. 1, Kerosene	257	236	322	375	..	278
Residual	50	34	66	59	..	48
Miles per truck, average all dealers	11,510	13,872	12,468	10,269	..	12,626
Dealers selling over million gal.	8,107	13,550	11,352	8,582	..	11,302
Yearly gallons per truck (thous.)						
Distillate	332	377	270	396	..	341
No. 1, Kerosene	228	212	217	360	..	232
Residual	445	715	684	1,138	..	695
Average gallons per drop—Distillate	190	237	253	279	195	234
No. 1, Kerosene	50	74	119	64	..	80
Residual	2,490	1,500	1,198	1,112	..	1,588
Gallons per truck-mile, Distillate	29	27	22	39	..	27
Percent of dealers using Degree-Days	60	70	37	59	12	56
Percent of customers getting D-D Del'y	74	90	57	83	12	74
Percent of dealers using fill signals	93	70	35	18	11	58
Percent of oilheated homes with fill signals	41	32	11	12	4	26
Percent of dealers using brands of suppliers on tank trucks	33	32	39	82	63	41
Percent of total fueloil sold by these branded outlets	20	33	31	96	55	37

of the total volume . . . showing that they are only 10% smaller than the average size of all companies. In other words, the average branded company, nation-wide, is a million-gallon marketer.

Another topic of considerable 1946 interest was the economic aspect of the small or medium bulk plant. A number of distributors have told FUELOIL & OIL HEAT that they own bulk plants but have stopped using them, because they can get a better deal under the rack at their supplier's plant. The chart shows at a glance that only in the Midwest is there enough extra margin to bulk plant owners to cover the cost of the plant's operation.

In general, the difference in margins is only 10 points between tank car price and under the rack price, while it costs 24 points to run a plant. Naturally, this is not reflected in posted prices in many markets, rather it results from favorable deals made to large rack buyers.

In the Pacific Northwest, the table shows that bulk plant operators get less margin than rack buyers, a result of the special nature of that market. In the large seaboard cities, where most oilheating is concentrated, the big distributors get favorable margins because of their volume, and they as a rule load at the tidewater tanks of their major suppliers. The Northwest distributors having active bulk plants of their own are mostly in the smaller cities, away from tidewater, and they average selling considerably less volume per outlet.

In the table showing costs and margins reported from all sections, there is no clear explanation for the divergent costs between sections on some items. Industry practice varies sufficiently between companies and between markets that cost accounting methods are known to differ widely. Yet that would hardly explain why Mid-Atlantic truck costs are 13 points below New England and 15 points below the Midwest. It will take further study to understand this.

Notice the difference between the cost figures in the table and those in the chart. The table includes all reporting companies, and their average size is indicated by sales of 1,142,000 gallons of distillate in 1946. The companies represented by the chart are only those that sold over a million gallons in 1946, averaging 2,817,000 gallons of distillate, or two and one-half times as large as the average of all companies. Notice that the operating costs of the larger companies are considerably above those of the smaller average sized companies. There are at least two possible explanations: (1) the large companies know better their full costs because they can afford talented accountants; (2) the larger the company, the less detail work can be done by the executives, the more functions must be delegated to employees . . . often employees of a type that the small company never needs.

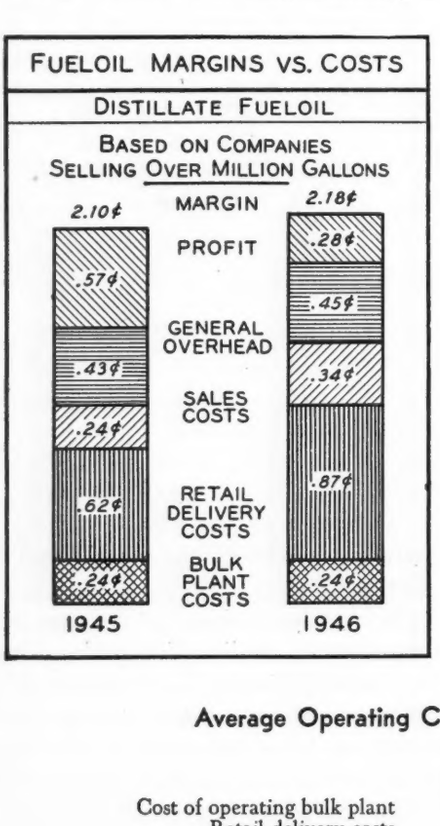
Fueloil distributors bought approximately 4,800 new tank trucks in 1946. This is a small number, considering the industry's needs, but compares rather closely with their buying intentions expressed a year ago and reported in the January 1946 issue. They said then that they would buy during the year 4,448 trucks. There was also similarity on the other items between their planned and their actual purchases. For example, they said they would buy 1,171,365 ft. of fueloil hose; they did buy 1,251,242 ft.; they planned to install 1,357 new bulk plant tanks; they did install 1,569.

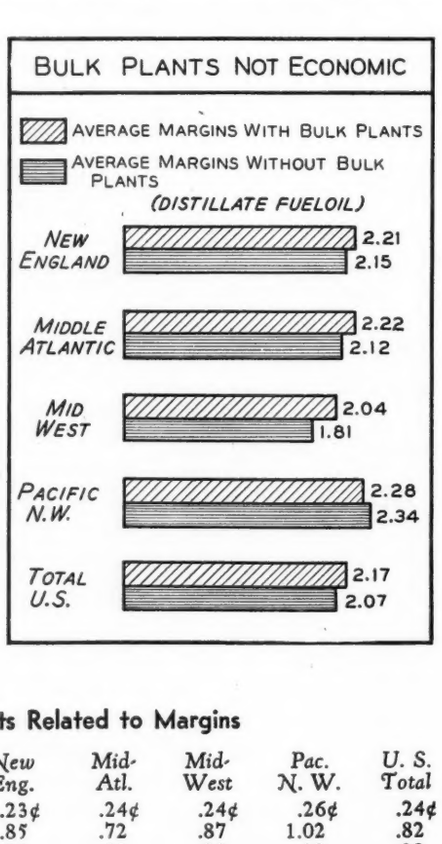
There is nothing particularly difficult in sight for fueloil distributors in 1947. There have been margin increases in a few spots recently, will no doubt be more unless operating costs turn down, because the larger companies will not long be satisfied with 28 points profit, for it's only around 3% on gross billing. Sales expenses generally will go up, for in most markets it is time to start more advertising. Competition will increase as refiners realize that they want more fueloil business at present attractive prices.

It is important to recognize, however, that more markets have been spoiled by too wide margins than by too thin ones.

New Equipment Bought 1946

	Number
Fueloil trucks, under 1,000 gallons	1,081
1,000 to 1,499 gallons	1,866
1,500 gallons and over	1,844
Truck equipment, including new trucks—Meters	7,907
Pumps	9,179
Hose reels	7,080
Fueloil hose, feet	1,251,242
Bulk plant equipment—Tanks	1,569
Pumps	636
Meters	1,039
Total new tank cap. (gal.)	44,838,000
Fill signals for customers tanks	206,551





Average Operating Costs Related to Margins

	New Eng.	*Mid-Atl.*	*Mid-West*	*Pac. N. W.*	*U. S. Total*
Cost of operating bulk plant	.23¢	.24¢	.24¢	.26¢	.24¢
Retail delivery costs	.85	.72	.87	1.02	.82
Selling expenses	.25	.33	.20	.39	.28
General overhead costs	.43	.43	.24	.51	.38
Total costs	1.76	1.72	1.55	2.18	1.72
Average margin to bulk plant operators	2.21	2.22	2.04	2.28	2.17
Average margin without bulk plant	2.15	2.12	1.81	2.34	2.07
Operating profit, with bulk plant	.45	.50	.49	.10	.45
Operating profit, without bulk plant	.62	.64	.50	.42	.59

Oil Production, Reserves End Year at New Peaks

THE AMERICAN PETROLEUM industry concludes the eventful year of 1946 with the greatest production of crude oil in its 87-year history, with ample reserves to meet all demands for liquid fuels and lubricants in the foreseeable future; and with plentiful stocks of gasoline and heating oils for the winter season, according to William R. Boyd, Jr., president of American Petroleum Institute.

Outstanding in the closing year has been the unprecedented demand for petroleum products. After V-J Day it was generally assumed that the demand for petroleum products would fall off as a result of the lessened military demand and the decline in the number of motor vehicles in service, he said. Instead the demand has grown, and estimates for the future, when motorcar and truck production gets into full stride, are being revised upward.

"The pessimistic view that crude-oil discoveries of importance are on the decline in this country has, in my opinion, little basis in fact. New discoveries in South Texas, for example, are giving rise to considerable speculation that this area may prove to be an oil reservoir of vast extent, and the same is true of new strikes along the Gulf Coast of Mississippi.

"The Rocky Mountain area is another case in point. The first oil wells drilled in the United States, outside of Pennsylvania, were drilled in Colorado in 1862, and oil has been produced commercially in the Rocky Mountain states since 1876.

"Nevertheless, prior to World War II, the oil industry in the Rockies never flourished as it has in other areas.

"With the advent of the war, however, the Rockies came to life, and bid to remain so henceforward. This is exemplified by the fact that daily average production there in 1940 was 94,000 barrels, and in 1946 was more than 150,000 barrels. New and important discoveries have been made last year and this. The potential output of this great region is not known now, but it is certain to become one of the nation's large oil-producing areas.

"Add to this the potential production of the Continental Shelf—methods of drilling offshore have been in use for a number of years—and it is readily apparent that the United States is in no danger of running out of oil or gas for many years to come. When the day of scarcity arrives, coal and oil shales will be utilized to make whatever liquid fuels the nation requires.

"Equally important as new discoveries in extending the nation's oil reserves are new methods of production and new methods of utilization. Not so many years ago a recovery of 20 per cent of the oil in a given field was not unusual. Today, by modern methods of conservation and production practice, a recovery of 80 per cent is expected. Thus the continuing research of the country's oil producers has quadrupled our reserves in existing reservoirs."

Heating Show Ready

Space Sold to 300 Exhibiting Companies

NEARLY 300 EXHIBITORS have taken all available space in the Seventh International Heating & Ventilating Exposition to be held January 27 to 31, at Lakeside Hall, Cleveland. The exposition, held under the auspices of the American Society of Heating and Ventilating Engineers, will run concurrently with meetings of the Society and the National Warm Air Heating and Air Conditioning Association.

The exposition opens Monday, January 27, at 2 p.m., and is open from 10 a.m. to 10 p.m. daily, except for Friday, January 31, when the show will close finally at 6 p.m. Admission is by invitation and registration. There is no admission fee.

Events for ASHVE members will commence on January 26 when a series of committee meetings will be held at Hotel Statler and at the Society's Research Laboratory, 7218 Euclid Avenue. Special dedication ceremonies will be conducted to commemorate the official opening of the Laboratory in the Society's building.

At the first session reports of officers and committees will be given, as well as a laboratory paper on the subject of air flow into suction openings. Following the first session there will be an informal luncheon at nearby Quad Hall.

The second session will be held at the Hotel Statler on Tuesday morning, January 28, and papers on dehumidification, and on the effect of moisture content on the diffusion of odors will be given.

During the afternoon a forum on panel and radiant heating will be conducted and because of the popularity of the subject a heavy attendance at this session is anticipated.

The technical session on Wednesday morning at the Hotel Statler will be devoted to atmospheric environment and health hazards and during the afternoon several inspection trips have been arranged by the local chapter.

A technical session on Thursday morning, January 30, at the Hotel Statler will conclude with the installation of the new officers.

During the afternoon a joint session with the National Warm Air Heating and Air Conditioning Association will be held.

Meetings of the National Warm Air group start Wednesday morning, January 29, with a general session presided over by Frank E. Mehrings, president. This will be followed by a luncheon at which Allen W. Rucker, president of the Tool Owners Union will be guest speaker. The Wednesday afternoon session, with Atlee Wise presiding, is to be devoted to merchandising and educational subjects and will feature the activities of the association in sponsoring Indoor Comfort Conferences for dealer groups. J. R. Scott is chairman of the Publicity and Merchandising Committee in charge of this work.

The Thursday morning session will cover technical subjects under the chairmanship of C. S. Franke. A report will be presented on the new warm air research residence which is being completed at the University of Illinois, and the various technical and code committees will report. The afternoon session will be held in conjunction with the ASHVE.

Hotel space in Cleveland during the week is extremely hard to get, and the associations have been urging their memberships to make reservations early and release rooms not needed as soon as possible. Interest is high, and a record attendance is expected at the exposition.

List of Exhibitors

7th INTERNATIONAL HEATING & VENTILATING EXPOSITION

Lakeside Hall—Cleveland, Ohio

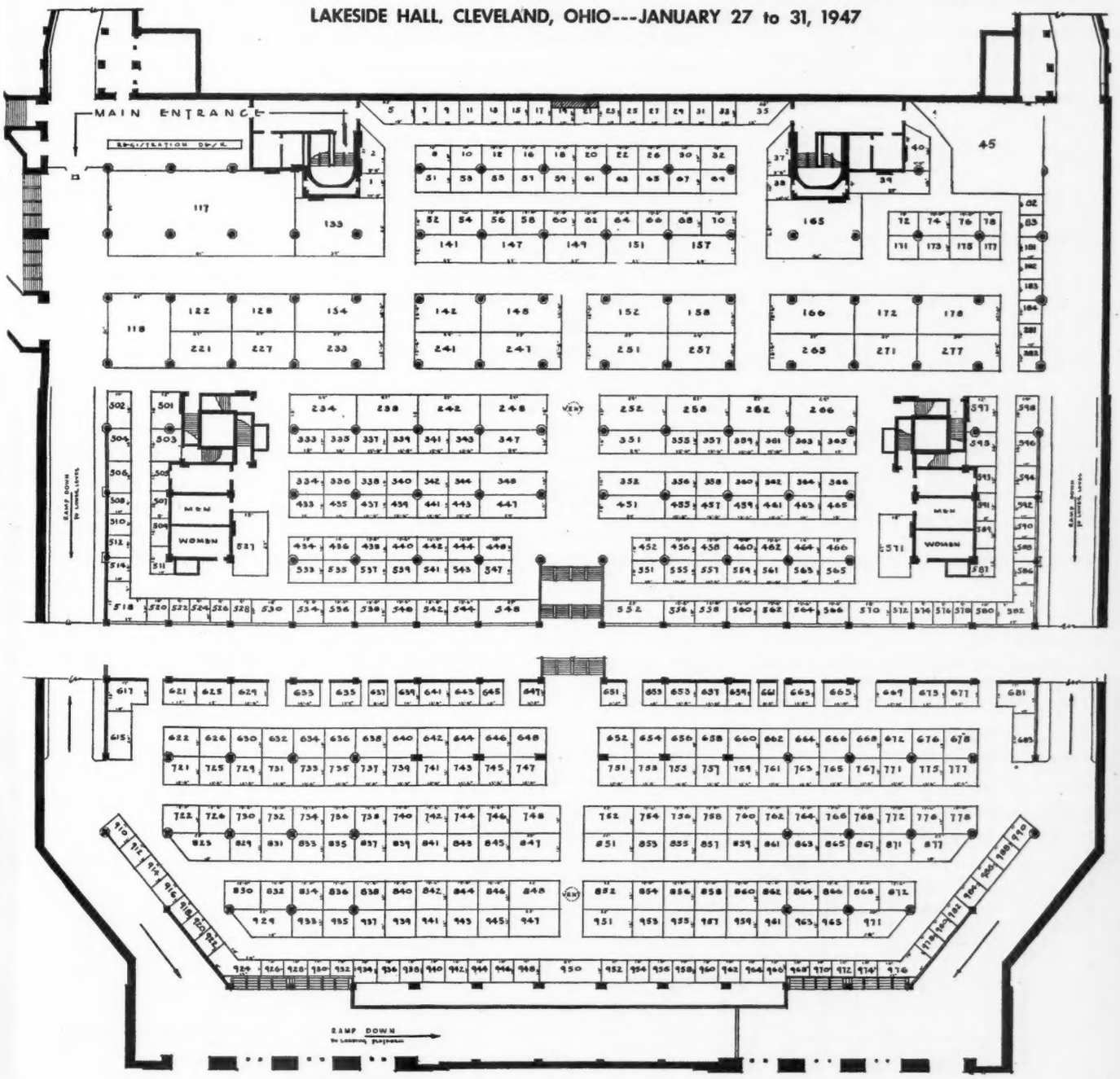
January 27-31, 1947

	Space No.
Ace Engineering Co.	22
Acme Industries, Inc.	663
Adams Manufacturing Co.	843
Aerofin Corp.	271
Air Cond. Assn. of Cuyahoga County	508
Air Cond. & Refrigeration News	976
Air Controls, Inc.	262
Air Controls Products, Inc.	1 & 2
Air Devices, Inc.	5–7
Air Maze Corp.	67–69
Airtherm Mfg. Co.	635
Aldrich Company	12 & 16
Allis-Chalmers Mfg. Co.	722–726
American Air Filter Co., Inc.	929–933–935
American Artisan	552
American Brass Co.	227
American Flange & Mfg. Co.	837–839
American Gas Asso.	45–555–557–559–561
American Rad. & Stand. Sanitary Corp.	117
American Ship Building Co.	986
American Society of Htg. & Vent. Engs.	505
American Society of Refrig. Engs.	572–574
American Stove Co.	234
V. D. Anderson Co.	177
Anemostat Corp. of America	165
April Showers Co.	645
Armstrong Machine Works	11
Auer Register Co.	647
Au-Temp-Co Corporation	980
Automatic Firing Corp.	30–32
Automatic Devices Co.	625
Automatic Humidifier Co.	343
Automatic Products Co.	540–542
Avery Engineering Co.	640
B. G. B. Manufacturing Co.	948
Bacharach Industrial Instrument Co.	184
Badger Corporation	982
Barber-Colman Co.	171–173
Bard Manufacturing Co.	681
Barnes & Jones, Inc.	362
Bear Manufacturing Co.	861
The Beaton & Cadwell Mfg. Co.	341
Bell & Gossett Co.	221
Bishop & Babcock Mfg. Co.	768
Black & Decker Mfg. Co.	655–657
Breuer Electric Mfg. Co.	466
Brown Electric Co.	966
Brown Instrument Co.	248–347
The Brundage Co.	510
Buffalo Forge Co.	158
Burnham Boiler Corporation	122
Cargocaire Engineering Corp.	594
Carrier Corporation	233
Carter Coal Co.	842
Century Engineering Corp.	845–847
W. M. Chace Co.	439
Char-Gale Manufacturing Co.	659
Chicago Filter Co.	637
Chicago Pump Co.	266
Chrysler Corp.—Airtemp Div.	72–74–76–78
Clarage Fan Co.	729–731
Clayton & Lambert Mfg. Co.	459–461
Cleaver-Brooks Co.	846
Cleveland Steel Products Corp.	178 & 277
Cleveland Steel Products Corp.	598
Coleman Company, Inc.	58–60–62
Cole-Sewell Engineering Co.	339
Combustion Control Corp.	639
Commercial Filters Corp.	651
Conco Engineering Works	656–658
W. B. Connor Engineering Corp.	571
Consolidation Coal Co.	775–777
Continental Instrument Co.	841
Coroaire Heater Corp.	763–765–767–771
Crane Co.	955–957–959
Crain-Brennan Associates	867
Curtis Mfg. Co.	541–543
Cyclotherm Corporation	863–865
The Dayton Rubber Mfg. Co.	460–462
Delavan Engineering Co.	934–936
Delco Appl. Div.—G. M.	730–732–829–831
Detroit Gas Regulator Co.	942–944
Detroit Lubricator Co.	834–836–838
Dielectric Products Co., Inc.	21
F. W. Dodge Corp.	39–40
The Dole Valve Co.	621
Domestic Engineering	357
Domestic Engine and Pump Co.	745
Dongan Electric Mfg. Co.	661
Dowagiac Steel Furnace Co.	456–458
Doyle Vacuum Cleaner Co.	19
Dravo Corporation	947
C. A. Dunham Co.	148
Duo-Therm Division, Motor Wheel	265
F. W. Dwyer Mfg. Co.	937
Effecto Grille	972–974
El Van Ayre Corporation	736–738–740
The Emerson Electric Mfg. Co.	534
Enterprise Engine & Foundry Co.	520
Fairbanks-Morse & Co.	733–735–737–739
Farr Company	576
Fedders-Quigan Corp.	281–282
Field Control Division	25
Fireline Stove & Furnace Lining Co.	26
Fitzgibbons Boiler Co., Inc.	258
Forest City Foundries Co.	536–538
Freeman Stoker Div.—Illinois Iron & Bolt	544
Frick Company	751
Friez Instr. Div. Bendix Avia.	742–744–746
Fueloil & Oil Heat Magazine	547
The Fulton Sylphon Co.	434–436
Gar Wood Industries, Inc.	142 & 241
General Bronze Corp.	924–926
General Controls Co.	157
General Electric Co.	752
General Filters, Inc.	916
Genl. Plate Div. Metals and Controls	646–648
Greenlee Tool Co.	961
Grinnell Co., Inc.	338–340
Guardian Products Corp.	509
Arthur Harris and Co.	355
Hart & Cooley Mfg. Co.	530
Harvey Whipple Inc.	503
Heating, Piping & Air Cond.	552
Heating and Ventilating	342–344
The Heil Co.	242
The Henry Furnace Co.	247
Henry Valve Co.	334–336
Herco Oil Burner Corp.	18
Hoffman Specialty Co.	134
Holcomb & Hoke Mfg. Co. Vent. Div.	82–83
Holleran Metal Prods.-O'Halloran Ind.	938
Home Ease Prods. Div., Inc., Bogue Elec.	823
J. W. Hopwood & Associates, Inc.	437
Ice Air Conditioning Co., Inc.	590-592
Illinois Engineering Co.	64
Illinois Testing Laboratories, Inc.	10
Imperial Brass Mfg. Co.	63
Independent Register Co.	448
Ingersoll-Rand Company	537
Ingersoll Steel Div.—Borg-Warner	636–638
Insul-Wool Insulation Co.	677
Iron Fireman Mfg. Co.	939–941–943–945
Jackson & Church Co.	871-877
Jackson Gas Burner Co., Inc.	587
Jefferson Electric Co.	734
Jenkins Bros.	455–457
Johns-Manville	641–643
S. T. Johnson Co.	950
Johnson Service Co.	527 & 528
K. & F. Distributing Co.	833–835
Kauffman Air Conditioning Corp.	918
Kaustine Company, Inc.	452
Kehm Corporation	502
Kent Company, Inc.	363
Kewanee Boiler Corporation	962–964
Kresne-Stamm Mfg. Co. (America) Inc.	940
Krueger Sentry Gauge Co.	593
Lau Blower Co.	442–444
Linde Air Products Co.	438–440
Link-Belt Co.	844
Liquidepth Indicators, Inc.	65 & 952
Lonergan Mfg. Co.	867
McAlear Mfg. Co.	745
McCord Corp.	634
McDonnell & Miller, Inc.	141
McQuay, Inc.	257
Maid-O'-Mist, Inc.	441
Jas. P. Marsh Corp.	660
Mercoid Corp.	563–565
Mid-Continent Metal Products Co.	175
Miller Company	910–912–914
Minneapolis-Honeywell Reg. Co.	248 & 347
Modine Manufacturing Co.	548
Monarch Manufacturing Works, Inc.	13
The Moore Company	463
Morrison Products, Inc.	748
Morse-Smith-Morse, Inc.	630
Mueller Brass Company	518
L. J. Mueller Furnace Co.	356–358–360
Nash Engineering Co.	252 & 351
National Oil Burner Co.	633
National Radiator Co.	352
National Thermal Drive Co., Inc.	27
Niagara Blower Company	118
Norge-Heat Div.—Borg-Warner	848
Norman Products Co.	15–17
C. A. Olsen Mfg. Co.	247
Owens-Corning Fiberglas Corp.	652–654
Pacific Manufacturing Corp.	20
Paragon Electric Co.	840
Patterson-Kelley Co., Inc.	522–524
Peerless Manufacturing Corp.	551
Penn Electric Switch Co.	181–182–183
Perfection Stove Co.	133
Perfex Corporation	52–54–56
Petroleum Heat & Pwr Co.	622–626–721–725
Petrometer Corporation	65 & 952
Pittsburgh Corning Corporation	506
Plibrico Jointless Firebrick Co.	26
Plumbing and Heating Journal	365
Pocahontas Fuel Co., Inc.	954–956–958–960
Power Plant Supply Co.	745
Preferred Utilities Mfg. Corp.	37–38
Premier Burner Co.	588
Products Research Co.	596
Pyle-National Co.	615
Quaker Manufacturing Co.	51 & 53
Randall Graphite Products Corp.	359–361
Raytheon Manufacturing Co.	582
Research Products Corporation	586
Redmond Company, Inc.	526
Reznor Manufacturing Co.	364–366
Rheem Mfg. Co.	864-866-868-872-963-965-971
J. E. Rhoads & Sons	533–535
Richmond Radiator Co.	128
Ric-Wil Company	562
Ridge Tool Co.	951–953
Roberts-Gordon Appliance Corp.	759–761
Rome-Turney Radiator Co.	465
F. C. Russell Co.	772–776–778
Rutledge Boiler Co.	514
Sampsel Time Control, Inc.	653
Sarco Company, Inc.	451
Schild Manufacturing Co.	970
Scientiae Corporation	968
Sheet Metal Worker	365
Skuttle Manufacturing Co.	978

	Space No.
A. O. Smith Corp.	922
H. B. Smith Company, Inc.	539
Snips Magazine	512
Spencer Thermostat Co.	646-648
Stok-A-Fire Company, Inc.	30–32
Strong, Carlisle & Hammond Co.	337
Sundstrand Machine Tool Co.	683
Sun-Fire Stoker Corp.	859
Surface Comb. Corp. 754-756-758 853-855-857	
Syncromatic Corporation	59–61
Taco Heaters, Inc.	333-335
Temp-Control, Inc.	589–591
Thatcher Furnace Co.	669–673
Timken Silent Automatic Div.	251
Tinnerman Products, Inc.	560
Torrington Manufacturing Co.	501
Trane Company	66–68–70
H. O. Trerice Company	920
Triplex Heating Specialty Co.	564
Turnbull Heating Co.	972–974
Tuthill Pump Co.	946
Tuttle & Bailey, Inc.	464
U. S. Air Conditioning Corp.	665
U. S. Radiator Corp.	856–858–860
U. S. Register Company	556–558
U. S. Testing Company, Inc.	9
Universal C. I. T. Credit Corporation	862
Utility Appliance Corp.	595–597
Viking Air Conditioning Corp.	433–435
Viking Manufacturing Corp.	166
Viking Pump Co.	504
Walton Laboratories, Inc.	566–570
Waterfilm Boilers, Inc.	851
Waterman-Waterbury Co.	348
Watts Regulator Co.	629
Webster Electric Co.	830–832
Warren Webster & Co.	147–149–151
Weil-McLain Co.	447
Weinman Pump Co.	745
Westinghouse Elec. Corp.	760–762–764–766
Wheeling Furnace Corp.	511
White-Rodgers Electric Co.	172
Whittington Pump & Eng. Co.	238
The Will-Burt Co.	632
Williams Oil-O-Matic Div.	753–755–757
Willoughby Machine & Tool Co.	578–580
Wilson & Co., Inc., Air Filter Div.	984
L. J. Wing Manufacturing Co.	747
Wolverine Tube Division	507
Worthington Pump and Mach. Corp.	642–644–741–743
"X" Laboratories, Inc.	23
Yarnall-Waring Co.	617
York Corporation	152
York Heat Division-York Shipley, Inc.	662-664-666-668-672-676-678
Young Radiator Co.	55–57

7th International Heating and Ventilating Exposition

LAKESIDE HALL, CLEVELAND, OHIO---JANUARY 27 to 31, 1947



Burning Index for Distillates

API Gravity and Midpoint of Boiling Range Qualify Fuels

by
J. C. Reid*
and
A. B. Hersberger*

THE DOMESTIC OILHEATING business has been undergoing a period of rapid growth and according to the more reliable forecasts is expected to continue to expand at a high rate. Virtually all of this expansion has involved the use of burners originally designed to burn straight run fuels, which were roughly defined by volatility and distillation characteristics. With the passage of time some refiners shifted to heavier fractions, others used blends containing aromatic and naphthenic oils while some products even included cracked stocks. Wide experience has resulted in general agreement that low A.P.I. gravity oils and cracked fuels form more smoke and deposit more carbon during combustion than do the higher gravity and more paraffinic fuels. This effect is especially noticeable in pot type and rotary wall flame burners. Although this observation is qualitatively correct, there has been no generally accepted quantitative method for expressing the burning quality of any given fuel.

With the advent and wide use of catalytic cracking processes and the realization that the furnace oils resulting from these operations are destined to play an important part in domestic heating, a more quantitative approach to the problem of burning quality has become increasingly desirable. Sullivan and Glendenning[1] have proposed Diesel Index as a measure of burning quality while Cauley and Delgass[2] have recently proposed carbon and hydrogen ratio as a measure of this quality. Both of these tools are quite useful. However, Diesel Index does not take into account the boiling point of the oil which is known to be an important factor, while carbon and hydrogen ratio is extremely difficult to determine accurately; the authors of the latter tool have presented means of estimating carbon-hydrogen ratio and have introduced an arbitrary boiling point correction.

Investigation of the problem was begun some time ago in Atlantic's Fueloil Laboratory to determine whether some readily available properties of the oil could be used to develop a correlation with actual burner performance. The outcome of this study has been the development of the "Burning Index Chart" which is presented here. This index is based on two easily obtained physical properties, namely, gravity and 50% boiling point of the oil, and has been developed primarily for use with oils having approximately the distillation range of No. 2 fueloil.

The measurement of burning quality is accomplished by means of a method which was worked out in Atlantic's laboratories several years ago. This method is based on our belief that the range of burner operating conditions under which an oil will burn satisfactorily provides an excellent quantitative comparison of the relative burning qualities of oils. The oils are burned in a burner-boiler combination set up so that both the air and oil firing rate may be varied widely. Smoke densities of the flue gases are determined with a sensitive smokemeter using a light transmission-photoelectric cell principle. After a series of measurements are made on a given oilburner under various operating conditions the data are first plotted as air setting vs. smoke density of the flue gases for the different firing rates as shown in Figures 2 and 2A. These curves are then used as the basis for the construction of another graph, Figures 3 and 3A, which shows the limiting conditions of burner operation defined by a smoke density of 20 or, where that amount of smoke is not formed, by the design of the burner. At 20 smoke density smoke is just visible at the top of the stack. The choice of this arbitrary value has no appreciable effect on the end results. The bounded area in Figures 3 and 3A shows at a glance the range through which firing rate and air

*Atlantic Refining Co., Philadelphia.

FIG. 2

EFFECT OF OPERATING CONDITIONS ON SMOKE DENSITY OF FLUE GAS

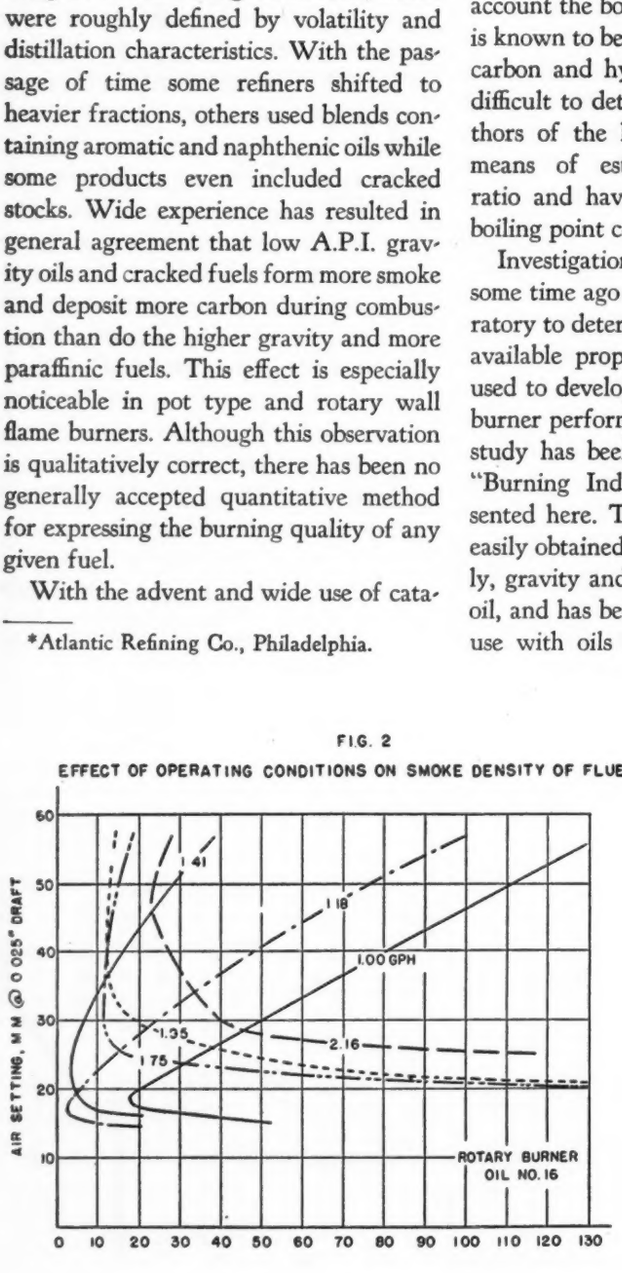


FIG. 2A

EFFECT OF OPERATING CONDITIONS ON SMOKE DENSITY OF FLUE GAS

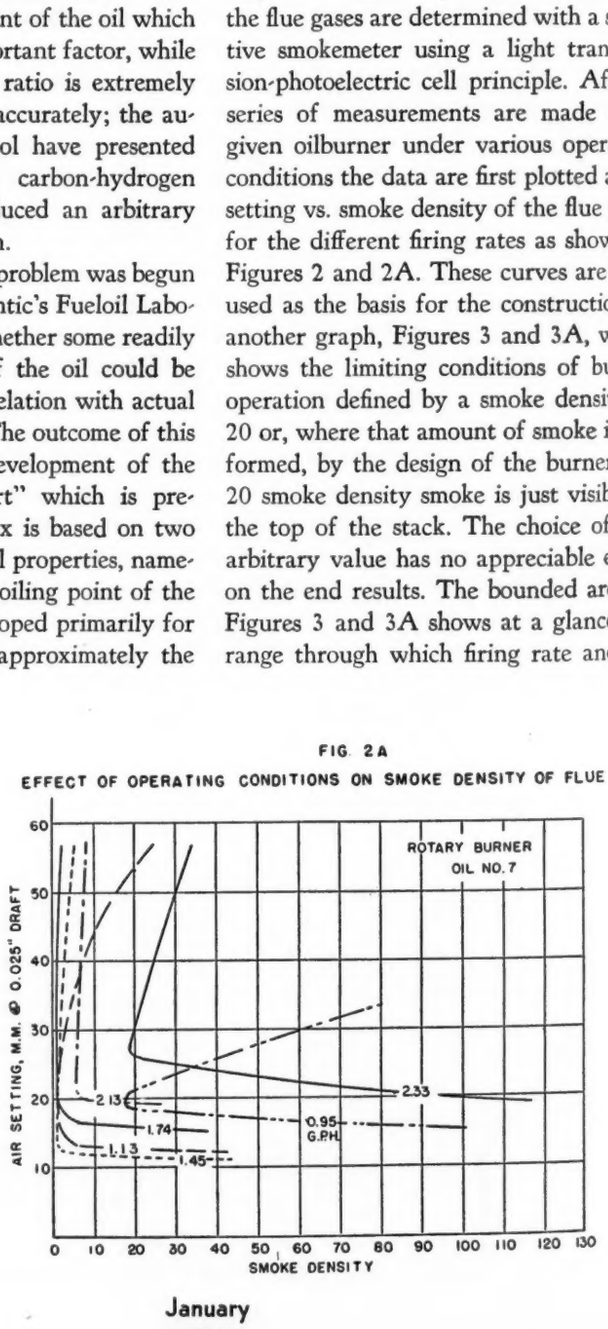


FIG. 3

COMBUSTION ENVELOPE

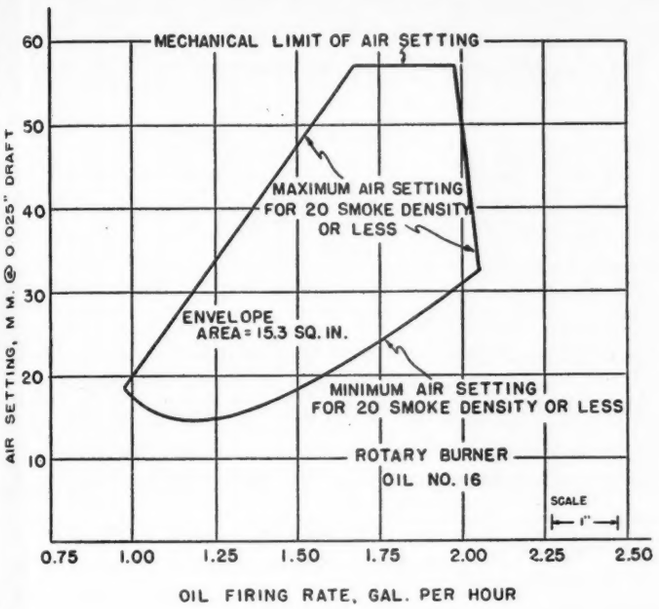
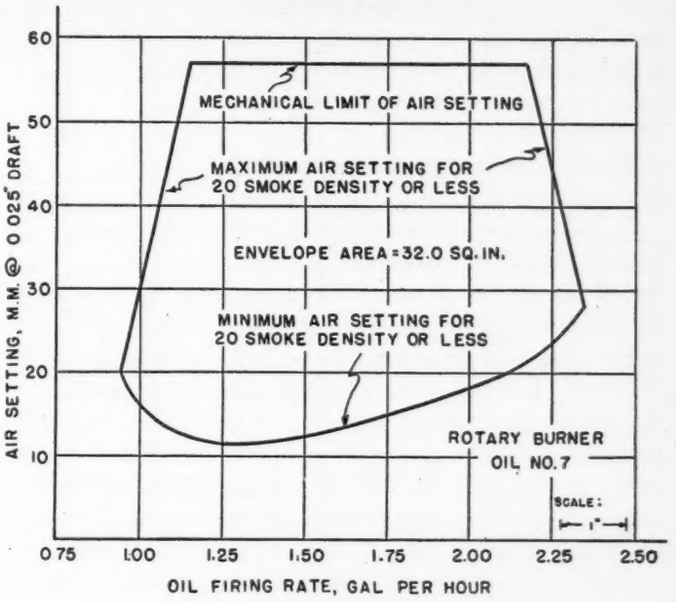


FIG. 3A

COMBUSTION ENVELOPE



settings can be varied and produce no more than 20 smoke density flue gas for a given oil in a specific burner and boiler combination. The area of this zone, which has been termed the combustion envelope, plotted on a fixed scale is then measured by means of a planimeter. This area has been found to vary rather widely for different oils burned in the same equipment under identical conditions of draft, boiler temperature, etc., as may be readily observed by comparing Figures 3 and 3A. Obviously this area will vary for the same oil from burner to burner; however, it has been found that the order in which a series of oils are rated as well as the quantitative differences between them are the same for any burner. The bulk of our study has been made on a rotary wall flame burner in combination with a medium size boiler at a draft setting of 0.025 inches of water. This apparatus was selected because of its greater sensitivity in the defined method exhibiting a greater difference between various oils.

The air setting referred to in the foregoing work is a measurement of the width of a single, adjustable air port opening on the burner in question. This numerical value bears a direct, but not linear, relationship to the percent excess air. Smoke density curves of the same form as those shown in Figures 2 and 2A can be plotted using percent excess air as the ordinate. However, when percent excess air is used as the ordinate in plotting combustion envelopes the curves are not as accurately defined and, because of the non-linear relationship between air setting and percent excess air, possess a lower degree of sensitivity than is the case when air settings are employed directly. Due to these latter differences and to the facts that the air setting is comparatively easy to measure, is less subject to error than is the calculation of percent excess air from flue gas and fuel analyses and has the added advantage of permitting the accurate setting of operating conditions at the beginning of the test through its use, the numerical value of the air setting has been employed throughout this work. That this expedient does not materially affect the rating of the burning qualities of the oils is demonstrated by the comparison of the combustion envelope areas presented in Table 1. The oils are rated in the same order regardless of which method of plotting combustion envelopes is used, and in view of the disadvantages cited for the use of percent excess air the ratio between the two results is relatively constant.

The combustion envelope area bounded by 20 smoke density has a very practical significance in selecting an oil. The larger this area the less chance there is that burner operation will become poor through inadvertent changes in air intake or oil feed rate once the burner has been set for sat-

TABLE 1

Properties of Medium Furnace Oils

Sample No.	3	16	2	11	10	1	17	4	12	9	13	8	19	5	15	14	6	7	18
API Grav.	23.0	22.3	25.5	27.6	27.5	28.0	29.0	30.2	32.6	32.8	32.7	34.5	36.0	38.0	37.9	37.4	39.6	41.4	45.4
ASTM Distn.																			
IBP	235	360	334	298	280	455	315	330	322	363	420	402	360	342	360	400	354	382	344
10%	430	429	452	407	428	496	455	406	402	431	480	477	429	393	412	467	410	452	384
50%	485	502	518	480	496	550	506	475	470	512	547	546	498	463	506	544	508	544	476
90%	564	576	606	562	578	615	596	555	548	599	608	596	572	543	576	592	570	577	560
EP	612	603	632	618	616	640	651	601	602	620	628	622	616	584	596	613	590	591	593
Comb. Env. A*	15.5	15.3	18.2	22.3	20.6	19.7	24.7	25.0	26.1	26.7	23.6	29.7	(30.1)	32.0	32.7	31.3	31.4	32.0	33.8
B**	—	4.3	—	—	—	5.1	5.8	—	8.6	—	—	—	—	8.7	—	—	—	—	9.7
Ratio A/B	—	3.6	—	—	—	3.9	4.3	—	3.0	—	—	—	—	3.7	—	—	—	—	3.5

*Air setting used as ordinate. **% excess air used as ordinates. ()From Burning Index Chart.

isfactory operation. Clear flue gases are indicative of clean, efficient operation with a minimum of soot and odor formation. The oil that shows the largest area is best for the burner from the point of view of uninterrupted, automatic, clean operation. This area must, of course, be reduced to a more universal measure to be of practical use.

In Table 1 are presented the gravity and distillation characteristics of a number of oils used in this study along with their combustion envelope areas determined in the manner previously described. Through close study it may be seen that the magnitude of this area is related to both the gravity and the 50% boiling point of the oil. This can be shown graphically by plotting envelope area versus A.P.I. gravity of the oil. By making allowances for experimental error it is then possible to draw a family of curves relating these two properties for different 50% boiling points. On the basis of this relationship lines of constant combustion envelope area were then drawn on rectangular coordinates scaled off with 50% boiling point as abscissae and A.P.I. gravity as ordinates. Then, since the actual numerical value of the area had no significance for any apparatus other than the one in which it was determined, these lines were converted to constant "Burning Index" lines which provide a more universally acceptable rating of the oils, Figure 4. The accuracy with which a chart of this nature can be used to predict the burning qualities of an oil either in terms of combustion envelope area or of "Burning Index" is effectively demonstrated in Table 2, wherein actually determined values are compared to values read from the charts.

TABLE 3

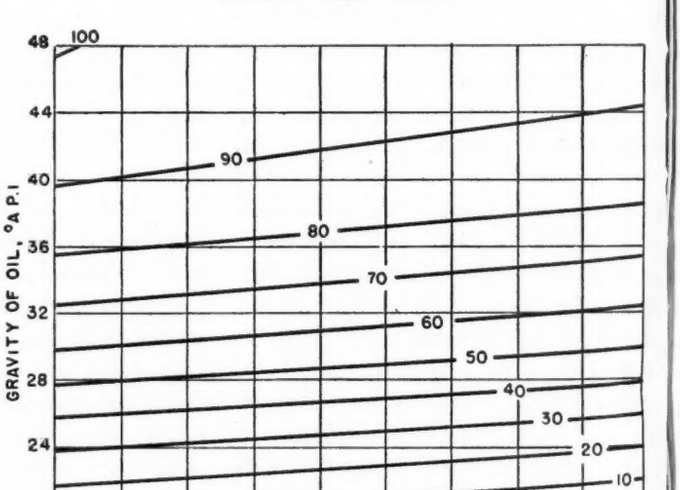
Burning Index of Blends

Oil Sample	Burning Index From Chart (Oil Props.)	Burning Index Calculated
1	40	
3	23	
50% 1, 50% 3	32	32 (0.5 x 40 + 0.5 x 23)
1	40	
5	86	
50% 1, 50% 5	64	63 (0.5 x 40 + 0.5 x 86)
1	40	
5	86	
7	86	
11.5% 1, 50% 5, 38.5% 7	82	81 (0.115 x 40 + 0.5 x 86 + 0.385 x 86)

The fact that oils are quantitatively rated in the same order in most burners as previously stated can be readily illustrated. For example, Oil No. 17 may be seen to have a Burning Index intermediate between those of Oils No. 16 and No. 19 and lying at a point 54% of this difference above Oil No. 16, Table 2. The combustion envelope areas of these latter oils when determined in a gun type burner were found to be 8.6 sq. in. and 12.1 sq. in. for Oils No. 16 and No. 19 respectively. On the basis of these values and the rating of Oil No. 17 relative to these oils on the Burning Index scale a combustion envelope area of 10.5 sq. in. was then predicted for Oil No. 17 in the gun type burner. Actual determination disclosed a combustion envelope area of 10.7 square inches, well within understandable experimental error.

FIG. 4

BURNING INDEX CHART



A "Burning Index" to have maximum usefulness must be such that the index of blends can be predicted accurately from the indices and the proportions of the constituents present in the blend. The index presented here handles this phase of the problem correctly as the data in Table 3 shows.

To be used as a criterion in the production of furnace oil the minimum Burning Index desired is selected and the limiting permissible properties of the oil are then read from the Burning Index Chart. For example, if an oil of 70 minimum Burning Index is desired the minimum gravity and corresponding maximum 50% point are 32.6° A.P.I. and 460°F. respectively. If oils of higher A.P.I. gravity are available higher maximum 50%

(Continued on page 174)

TABLE 2

Combustion Characteristics—Accuracy of Prediction Method

Sample No.	API	50% BP	Combustion Envelope Area Det'd.	Pred.	%Dev.	Burning Index Det'd.	Pred.
3	23.0	485	15.5	16.1	—3.7	21	23
16	22.3	502	15.3	14.7	4.1	20	18
2	25.5	518	18.2	18.4	—1.1	32	32
11	27.6	480	22.3	22.2	0.5	47	47
10	27.5	496	20.6	21.6	—4.6	41	44
1	28.0	550	19.7	20.4	—3.4	37	40
17	29.0	506	24.7	23.1	6.9	57	50
4	30.2	475	25.0	25.2	—0.8	58	58
12	32.6	470	26.1	27.8	—6.1	61	68
9	32.8	512	26.7	26.8	—0.4	64	64
13	32.7	547	23.6	25.7	—8.2	52	60
8	34.5	546	29.7	27.4	8.4	74	67
19	36.0	498	—	30.1	—	—	77
5	38.0	463	32.0	32.4	—1.2	85	86
15	37.9	506	32.7	31.3	4.5	87	82
14	37.4	544	31.3	29.9	4.7	82	77
6	39.6	508	31.4	32.2	—2.5	82	85
7	41.4	544	32.0	32.4	—1.2	85	86
18	45.4	476	33.8	35.2	—4.0	92	97

Who Can Ship by Pipe?

Present Pipelines Not Common Carriers in Fact, Experience Shows

by

Gordon Duke*

NOT SINCE THE YEAR 1866 when Samuel Van Sickle of Titusville, Pennsylvania, laid a four-mile oil pipeline and troops had to be called in to protect it against the teamsters, has there been a time when pipelines made news as they do these days.

Stories of the laying of hundreds of miles of new pipelines, from Witting to Minneapolis, from Corsicana to Patoka, from Drumright to Witting, make dull reading compared with the controversy over the disposal of the Big Inch and Little Big Inch pipelines.

While gas has been turned into the Little Big Inch under a 120-day lease for delivery to midwestern points, there are many in the petroleum industry who believe that preference may yet be given to oil use of the Inch Lines when they are finally sold. It appears that the belief is gaining ground that the use of the lines for oil would help a great many independent producers and refiners. I share this opinion, provided the big lines are operated as true common carriers. It's no secret, however, that most oil pipelines are not so conducted.

Congress Studies Lines

The Monopoly Subcommittee of the House of Representatives is preparing a report on the effectiveness of the Government agencies in guarding free enterprise. This report will be sent to the new Congress for consideration. Since invitations were sent to groups and individuals to submit views and make recommendations on the growth of economic concentration in American industry, suggestions probably have flooded the Monopoly Subcommittee. But I am afraid not enough is being done by the independent segment of the oil industry to draw the Committee's attention to the deplorable fact that most oil pipelines are common carriers in theory only. Indeed this issue has never had the attention it deserves.

According to law, interstate petroleum pipelines are supposed to be common carriers in the same sense as railroads. Most pipelines cross public highways and other federal or state property; therefore, it is only fair that, in return for the grant of the right of way, they should serve everybody in need of transportation.

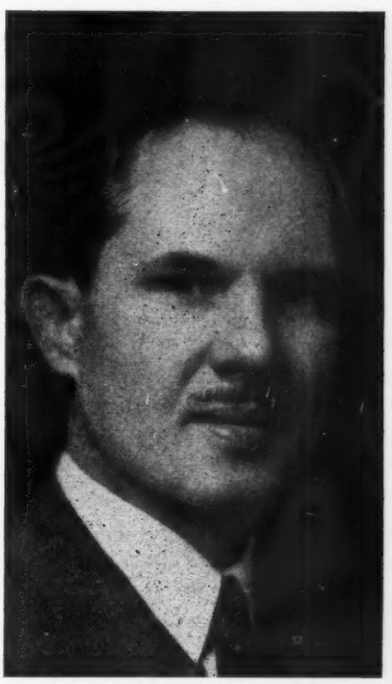
Today with more and more pipelines being built, it is essential for all marketers to be allowed the use of the lines that serve their area. However, since they are generally owned by one or more of the large companies, as a rule their use is limited to the owners and their connections, despite the fact that they profess to be common carriers.

Barring Independents

To refuse a tender from any shipper is not too difficult. Many excuses have been used by pipeline companies, and unless action is taken, the same excuses will be used in the future. The most common method of keeping unwelcome shippers out of a line is to separate ownership of the line itself from ownership of the input and offtake storage terminals. Oddly enough, most of the land adjacent to the input and offtake points is usually controlled bewteen the pipeline owners and the owners of the storage terminals, making it difficult, even impossible at times, for an outsider to acquire suitable land for terminal facilities, or even easement rights through which to string connecting pipe to the trunkline itself. To the last detail, everything is planned and organized to keep competitors out of the royal enclosure.

This is no theoretical analysis. My company once made a determined effort to tender to a common carrier pipeline which evidently didn't want our business. After finally meeting all the requirements of the tariff regulations of a certain pipeline, about two years ago, our tender was resisted on flimsy grounds. When we refused to accept these excuses the owners of this line appealed to the Petroleum Administration for War to issue a directive under war powers, the net effect of which prohibited our use of the facility. We filed a complaint with the Interstate Commerce Commission but relief was never granted; instead we were informed that the PAW directive probably provided the pipeline company with sufficient excuse to refuse our tender.

I believe that pipelines are built to provide the owners with a transportation advantage over their competitors, and I am fully aware of the fact that the construction of a pipeline requires a substantial capital investment, hence I do not begrudge them a profit. Still, I feel justified in believing that since most pipelines could not exist without the partial use of public lands, they should be operated on the same principles as railroads, to whose facilities, including freight stations, yards, warehouses and team tracks, every shipper, without exception, has the right of access. Thus every shipper that wishes to use a pipeline should have the same right to the use of all its facilities.



Mr. Duke

Inasmuch as the House Monopoly Subcommittee hopes to determine whether or not various Government agencies have

*President, Southeastern Oil and Affiliates, New York and Jacksonville.

been efficient in protecting free enterprise, I believe that the reasons why the independent segment of the oil industry does not have access to common carrier pipelines should be investigated. I hope that the report of this Committee will endorse the recommendations which I addressed to its Chairman recently. And I trust that the Department of Justice's new investigation of the oil industry, soon to be instituted, will be able to determine, among other things, whether or not a conspiracy exists in connection with the failure of the pipelines to operate in accordance with legal limitations.

To preserve the existence of many independents in the oil industry, it is absolutely necessary that pipelines be common carriers in fact as well as theory. To accomplish this, regulations must be enacted to require that both input and offtake terminals utilized by the owners of a line be operated as part of the common carrier facilities. In addition, tenders should be reduced to 5000 barrels and specifications of products to be shipped should be simplified and standardized. Last but not least, authority should be vested in the Interstate Commerce Commission to enable it to require that pipeline companies operate the lines to maximum capacity; even that they increase the capacity of the lines when called upon to do so by a representative group of potential users.

Key Government Group In Oilheating Session

FIFTEEN TOP OFFICIALS in Government agencies met with six oilheating industry men for an informal discussion on November 26 at Washington. Twelve were key men from National Housing Agency, Federal Housing Administration and Civilian Production Administration; the remaining three were from other Washington groups active in the Housing Program. The six industry men, W. A. Matheson, P. K. Addams, C. W. Whitney, Lon Casler, Jack Hess and Robert Gray, constitute a working sub-committee of the Joint Oilheating Committee for Veterans Housing, a 22-man group.

TABLE I

Public Preference vs. New Home Heating

	New Eng. States	*Mid. Atl. States*	*E. No. Cen. States*	*W. No. Cen. States*
Oilheating Preference	67%	58%	28%	40%
New Homes Oilheated	55%	22%	11%	15%

The three hour session resulted in a better understanding of heating needs in the housing program and the place that oilheating occupies in the program, or more specifically, the things that oilheating is prepared to do for the program. To stimulate discussion a series of 30 charts had been prepared and were presented by Gray, after which chairman Matheson invited active participation in exchange of views.

One point given emphasis was that while seven broad consumer opinion surveys show that 44% of the country's householders want to heat with oil (December FUELOIL & OIL HEAT, page 52), only 21% of the new homes thus far authorized have oil heat specified. The principal reasons are two: gas heating equipment is cheaper to install, which appeals to builders; nearly three-fifths of the new homes started in 1946 were in Southern or Western states where, generally speaking, heating requirements are moderate and fuel costs not burdensome, whatever is burned. Only two-fifths of the new homes are in New England, Mid-Atlantic and Midwest states, the traditional oilheating strongholds, but even in those areas there is less oilheating than the public preferences call for. Some change in this pattern will probably result from a list of recommendations later given to the interested agencies.

Table I shows the percent of public oilheating preference indicated by FUELOIL & OIL HEAT'S 1945 consumer interview survey, compared to the percent of oilheating actually being put into new homes in the areas of greatest distortion.

Table II shows how the over-all new home program has departed from the country's dwelling unit pattern, and also departed from the present distribution of the numbers of oilburners now in use.

TABLE III

Fuels Used in 672,453 New Homes

	Oil	*Gas*	*Coal*
New England	12,442	3,393	6,786
Mid-Atlantic	19,058	39,848	27,719
E. North Central	13,971	48,263	64,775
W. North Central	6,747	26,538	11,695
South Atlantic	47,163	21,617	29,477
E. South Central	7,812	14,706	23,437
W. South Central	2,358	75,445	784
Mountain	6,155	19,762	6,480
Pacific	23,124	106,097	6,801

The actual distribution of the various heating fuels to the new homes authorized to November 1 is shown in Table III. Not all of these were installed by the end of the year, for the builder can hold his authorization for as long as 90 days, if he likes, before either starting the home or getting a renewal. Thus, on some of these homes the oilburner installation may not be made before next summer.

TABLE II

New Home* Locations vs. Dwellings and Oilheating

	% of Total Dwellings 1940 Census	*% of Total New Homes Authorized*	*% of Total Oilheating Now in Use*
New England	8.2	3.4	17.8
Middle Atlantic	27.8	12.9	41.0
East North Central (Mich., Ohio, Ind., Ill., Wisc.)	23.2	18.8	11.3
West North Central (N. Dak., S. Dak., Nebr., Kans., Mo., Iowa, Minn.)	8.3	6.7	7.7
South Atlantic	8.8	14.6	9.0
East South Central (Ky., Tenn., Miss., Ala.)	4.1	6.8	.2
West South Central (Tex., Okla., Ark., La.)	7.0	11.8	1.2
Mountain	2.5	4.8	.9
Pacific	10.1	20.2	10.0

*New homes authorized to start, first 10 months, 1946.

Cash From Accounts Receivable

Oil Companies are Increasing Operations and Profits Through Credits

by

M. S. Lurio*

PERHAPS YOU HAVE SEEN advertisements calling attention to the possibility of obtaining loans on the security of sales and inventory and gave them scant attention. You would do well to devote a few minutes to examine the essence of this type of financing and to appraise its usefulness and advisability under certain circumstances. The principle is simple; the advantages are extraordinary; the cost is a small part of the benefits obtained.

Our monetary and credit system has imperceptibly developed in response to the needs of its entrepreneurs, making capital available to anyone who has demonstrated his ability and reliability and has the slightest justification for the proper use of borrowed funds. The device of accounts receivable financing, for example, though old in its evolution through many decades, has reached a high stage in its development and should be thoroughly understood by every progressive, enterprising and ambitious independent in the oil business.

You work hard to make profitable sales. The more such sales, the greater the net profits. The greater the volume of business, the larger is the number of dollars required to handle it properly and comfortably, in a manner satisfactory to your suppliers.

In addition, there are seasonal variations that are particularly extreme in the oil and oilburner field. And there are always situations, in both buyers' and sellers' markets, when ready access to loans will enable a capable business man to make very advantageous deals.

The independent whose business is growing rapidly, who is expanding and reaching out for more good business, cannot even in taxless times put aside enough from profits to provide for the much larger sums necessary to carry a fast-increasing volume. This is all the more difficult when taxes absorb such a substantial portion of one's net profits.

Banks cannot very well extend the credit he needs because the amount required may be many times his net worth. As trustees of depositors' money, banks must seek the best kind of risks, that is, those with an overwhelming margin of safety.

Where can the independent turn to acquire the funds necessary, without taking on a partner, thus increasing administrative salaries, interfering with management and in some cases relinquishing control of his business? Moreover, even a partnership arrangement is only a limited one as far as new funds are concerned, for a partner comes in for a fixed sum and may not have and is not bound to furnish any additional funds when required.

That is why the device of accounts receivable financing is almost a miraculous one. If you sat awake nights trying to dream up a way of getting loans adequate to enable you to increase net profits, you could not devise any method which is more simple, more sound, more flexible, more sufficient, and most of all, automatically self-liquidating, a feature which keeps the borrower from going off the deep end.

Leaning on Suppliers

Of course, there is the alternative of manipulating to get far more credit than one is entitled to from the principal supplier. In the past, independents have managed to get extraordinary lines of credit, in other words, free banking accommodation from their sources of oil. Some have done this as a deliberate, conscious policy, on the theory that their suppliers would therefore have to carry them, to furnish them with product, to nurse them along. There is always the danger of a showdown, in which the debtor loses his business or goes bankrupt. Many have operated on the precarious edge of bankruptcy for a long time, the very support they have been getting, weakening their own powers to support themselves, just as a rich man's son is spoiled by over-indulgence. The day of long credits from oil suppliers is practically gone. The business is settling down in the well-defined credit grooves established in other industrial fields, where the customers must stand on their own feet.

The sounder policy is to arrange to pay all bills on the dot, to be beholden to no one except on a businesslike basis, to pay for what you get, be it oil or credit.

Look about you in the business. Who are the most successful and the most highly regarded independents? Are they not the men who can and do pay all bills promptly—who can buy anywhere if they wish?

The accounts receivable methods of obtaining funds is the best answer in a great many cases, for independents are generally under-capitalized just as the majors are generally over-capitalized.

The method is simple: As daily deliveries are made by the distributor, copies of the invoices are sent and assigned to the accounts receivable company, which sends its check up to say 75% of the full amount to the distributor. This is just as if every customer paid 75% of his invoice on delivery and the balance on the usual basis.

Under one particular arrangement, which is a great improvement upon the standard method, all sales are assigned, but the borrower draws only what he needs on the day he needs it. This may, a good part of the time, be much less than 75% of the pledged accounts. Money can be drawn daily, weekly or upon request to meet the needs of the business. The beauty of this arrangement is that the borrower does not pay for idle funds—he pays only on the dollars outstanding daily, and this payment is charged his account at the end of each month.

A specimen record taken from an actual oil company account shows how the loan fluctuated from about $69,000 on the first of the month, up to a high point of almost $81,000 on the ninth of the month, going down to a low figure of about $28,000 toward the end of the month. The

*Treasurer, Lexington Corp., New York.

borrower drew $18,000 on the third, $18,500 on the ninth, $14,000 on the 17th and $17,500 on the 18th, etc. The borrower used a much smaller portion of the 75% which was always available to him, thus cutting down his charges to a minimum. Actual charges for the month were $595.

Roughly, the cost of such borrowing should not exceed ½% of the amount of credit sales (cash sales of course are not assigned) and may run a good deal less if loans average a good deal less than 75% of the pledged accounts. If it were possible to discount all purchases at 1% ten days, there is an obvious cash profit here, in addition to the much larger profits obtainable as a result of the increased volume made possible by such loans.

Under the non-notification basis, the customers are not notified by the accounts receivable company, who have no contact at all with the debtors of the borrower. When these debtors pay the borrower, he turns the collections over to the lender, at which time the difference is immediately returnable to the borrower. He can draw it at once or use it to reduce his loan until such time as he needs it.

The result is a revolving loan, going up and down with the needs of the business and enabling the distributor to make all the profitable sales he can, without trepidation as to his ability to pay for his purchases when payment is due, to discount all bills when possible, to ask no favors of anyone.

This is the whole story. A similar arrangement can be made with oil inventory. The details are purely mechanical. Once the system is set up, it functions automatically and requires a few minutes to a few hours a day on the part of one clerk depending upon volume to list the sales and the collections to be forwarded to the accounts receivable company, just as they have to be listed for the books and when making deposits in a bank.

There is a peculiar effect that takes place when an oil man borrows on his receivables. He becomes a better collector. He appreciates more definitely the unprofitability of fooling around with slow-paying customers. He demands his money on time and gets it, for he is ready to give up the procrastinators and delinquents who have been taking advantage of his good nature and poor business tactics.

Just one more point. Accounts receivable companies tend to become specialists in certain fields. They learn a good deal about the business, its nomenclature, prices, credit terms, suppliers and are in a position to compare figures of various borrowers. Those who specialize in loans to oil independents are in a position to confer valuable intangible benefits in addition to a substantial increase in net profits. Their business is to help you grow, otherwise their loans are in jeopardy. Good business demands that you take advantage of every device that will add to your earnings.

Teen Age Oilheating Contest Brings Out Their Viewpoint

TO GAIN A FRESH viewpoint on the advantages of oilheating, the three hundred essays by Westchester (N. Y.) High School students on "Contributions of Fuel Oil to Better Living" have been subjected to survey by the Westchester Oil Trade Association, sponsor of the student essay contest. The views expressed by the teen agers may prove interesting to other merchandisers of oilheating equipment.

The essay contest and $900 in cash awards were sponsored by the Association as a feature of its current campaign to promote local public consciousness of the superiority of oilheating. The campaign, co-designed by public relations director Herbert M. Spade of the Association and the S. Frederic Auerbach Advertising Agency of New York City, in addition to the contest, includes a popular local radio series "Westchester Youth Speaks," newspaper advertising, direct mail and car-card displays.

Conclusions were valuable, not so much for the information displayed but rather for the relative importance placed on oil heat advantages by the teen agers. Far in advance among the advantages cited was the saving in basement space involved in the installation of burners. The utilization as play rooms and attractive rumpus rooms of basements where oilburners have been installed was a recurring source of praise.

The second most frequent advantage applauded by the teen age jury was the comparative absence of work involved in tending an oilburner. Since the young people in the family do most of the chores around the house, the burden of tending the ashes and stoking the fire in the coal heat set-up falls on the young people, and their complaints were heated on that score. Improved school results due to better study conditions since switching to oil heat were claimed by a considerable number of the students.

Girls, over one-third of the entrants, emphasized another way oilburners ease the household chores. Typical was this statement from a querulous teen ager: "It isn't only due to Rinso and Super Suds that some people's wash is so white. It's bacause they live in an oilburning neighborhood and they haven't coal dust and fumes to annoy them."

The winners of the essay contest were announced on December 15, at a formal dinner of the Association in the Roger Smith Hotel in White Plains, New York. The fifteen winners of the contest and their parents were guests of the Association and the entire presentation program was broadcast over Station WFAS, White Plains.

Gas From Coal Mines Is Already a Reality

IN DISCUSSING THE problems of the coal industry, now that the public generally prefers to switch to oil or gas for home heating, it has frequently been suggested that coal will be our long range principal source of energy in some more convenient form, such as gas, electricity or petroleum products made at the mine.

It now develops that Russia has been making gas from coal in the mines for a number of years, and without physically handling the coal. The mines are sealed and oxygen driven in to support combustion of the coal in the earth's veins.

In our country the Alabama Power Co. has announced that it will seal off one of its smaller seams at its Gorgas mines and transform it into a retort for generation of coal gas.

Hydrocarbon Research, Inc., New York, announced last spring that it has successfully produced 1,000 Btu gas straight from coal.

Toronto Business Bureau Warns Customers on Burners

NEWSPAPER SPACE six inches wide by 8 inches high in the December 14 Sunday papers of Toronto, Ontario, under the sponsorship of the Toronto Better Business Bureau, Inc., skillfully warned prospective oilburner customers to "get the facts" on the burner they intended to install. The implication was that too many burners were unreliable, either in their construction or in their installation, and the customer should make a thorough investigation before buying any oilburner.

Under the headline, "What Do You Know About the Oil Burner You Intend to Install?" the copy presented a checklist designed to make the customer consider carefully his purchase. Questions asked, Is it of well-known manufacture? Have you asked the neighbor who operates one? Do you know the maker's reputation? Does the Agent supply printed contracts and directions? and Can you find him when you need him? The copy further points out that "a guarantee is only as good as the man or company behind it" and urges the prospect, "If in doubt—find out," and asks that he make sure the contract contains all the promises made verbally by the seller.

WHAT DO YOU KNOW
about that OIL BURNER you intend to install?
CHECK HERE
☐ Is it of well-known manufacture?
☐ Have you asked the neighbor who operates one?
☐ Do you know the maker's reputation?
☐ Does the agent supply printed contracts and directions?
☐ Can you find him when you need him?
☐ Can he back up his guarantee?
☐ Are parts and service readily available locally?
Oil-burners come in many types and sizes, and there is wide variation of performance and safety in operation.
Be sure to read your contract carefully. Make sure that it contains all the promises made to you verbally.
Remember that a guarantee is only as good as the man or the company behind it. Take your time and GET THE FACTS.
"If in doubt—find out." Consult your own heating engineer, architect, or established fuel dealer.
The TORONTO BETTER BUSINESS BUREAU, Inc.
"The Public Service of Private Business"
350 BAY STREET, TORONTO 1 - - - ADelaide 3285

Don't Credit John Lewis For Home Oilheating

DURING AND SINCE the recent fiasco of John Lewis, newspaper writers, columnists and radio brainsters have repeatedly pointed out how John was doing great things for the oilheating industry by building public resentment against coal. The only thing he actually did for oilheating was to inspire such men to talk about us . . . it would have cost quite a few dollars to buy that publicity.

The idea that Lewis and his tomfoolishness actually drives people to oilheating is just another example of whistling by the graveyard. Coal operators have been sympathizing with each other for years on that score, unwilling to recognize that people are deserting coal simply because of the convenience and comfort of modern fuels for home heating. Holding no brief whatever for Lewis or other labor racketeers, we can still be realistic and recognize that people are quitting coal for house heating for the same reason that they stopped buying ice, or got rid of old dobbin.

We know from numerous studies of the past 15 months that approximately 44% of people want to heat their homes with oil, 33% prefer gas and 18% want coal. Lest you think that the labor troubles of the coal industry during the war years have been responsible for those preferences, take note of the fact that in the winter of 1941, before we got into the war, Elmo Roper conducted a national survey on housing for *Fortune*, including fuel preferences, and found that 48% wanted to heat with oil, 30% with gas and 17% with coal. Making allowance for the fact that no two surveys ever get exactly the same ratios, it is clear that fuel preferences today are about the same as they were just before the war. The oilheating industry was heading for a boom when the war checked it. No, John's antics, so far as the oilheating industry is concerned, principally provide amusement (or amazement), few if any oilburner sales.

All of the foregoing relates to home oilheating. With industrial applications we have a somewhat different picture. Naturally, more industries will want to switch to oil if they believe that John isn't licked yet and will cause more shut-downs. But this is not so much of a blessing. Most oil refiners do not want to increase their sale of the heavy residual oils because with modern cracking processes they can break them up into higher priced light products.

Howard Page, head economist for Standard Oil Co. (NJ), speaking before the A.P.I. at Denver in July, said that his company wants to gradually reduce its present 26% yield of residual down to

10% within 15 years. Jersey is only one company, but it's a bell sheep.

What about the railroads? Those that burn coal were shut down tighter during the emergency than those using oil or electricity. The heads of the coal burning roads told the newspapers that they were getting fed up and were inclined to think more of diesels. Of course, new locomotives on order are 90% diesels anyway . . . they run cheaper. If Lewis could actually be the cause of some other roads going to diesels, this would hurt, rather than help, oilheating, for diesel fuel competes for the same part of the barrel as heating distillates.

Anyway, John gave us some extra publicity for which we will now bless him.

Smoke Regulation Encourages Greater Use of Oilburners

WITH INDICATIONS that it will continue to spread, a postwar trend toward the adoption of more stringent municipal smoke control ordinances and more effective enforcement of existing ordinances has made rapid recent progress, a survey of developments in major cities throughout the country discloses.

One of the results of this trend has been stimulation of conversion or reconversion to oilfiring, especially among smaller industries and other establishments which find it more economical to turn to oil than go to the expense of installing ash-collection devices and other smoke control equipment.

Cities most recently adopting new ordinances attacking the problem include Wilmington, Del., which has defined allowable smoke emissions and prescribed penalties for violators. The Wilmington ordinance is less strict than those of many other cities, however, in that it does not apply to railroad locomotives. It also contains a liberal provision allowing five years from the date of the ordinance for any structural changes found necessary by city enforcement authorities.

Rhode Island's legislature this year passed an act to enable the city of Providence to adopt a model, modern anti-air pollution ordinance. This state legislative action was followed by the recent introduction in the Providence City Council of a measure to replace the city's antiquated 1912 smoke abatement ordinance.

The proposed new Providence measure, which is pending, provides for establishment of a new Division of Air Pollution Regulation in the city public service engineers' department, with a chief and three assistants; creation of an advisory committee of technical men and laymen; a system of permits and fees to govern the installation and operation of fuel-burning equipment; greater enforcement authority, and stiffer standards controlling the constituents of polluted air.

Columbus, O., last spring adopted a new stringent smoke control ordinance. Roy Bowers who was named chief smoke control engineer under the new measure subsequently set Nov. 15 as the deadline for industries, business firms and railroads to comply with its provisions. Sixty days after the deadline, he said, a list of those failing to comply would be compiled and violators charged with misdemeanors.

Proposals for more stringent legislation have been pending for some time in Cleveland, where the smoke abatement problem has long been a matter of concern. An ordinance, based on a Pittsburgh law, was recently introduced in the Cleveland City Council by Mayor Burke, but was sidetracked by the Council's subcommittee on air pollution which is giving further consideration to other proposals.

Mayor O'Dwyer last summer called for a study of what steps should be considered for the development of plans for the control of air pollution in New York City.

Numerous Cities Active

Other cities which have recently launched smoke control programs under new ordinances, are considering proposals for the adoption of more stringent regulations, or have instituted more effective enforcement under existing local laws include Birmingham, Chicago, Columbia, S. C.; Indianapolis, Los Angeles, Louisville, Milwaukee, Omaha, Richmond, Va., and Youngstown, O.

St. Louis, which pioneered in smoke abatement and is currently in the midst of a postwar effort to strengthen its program, has been seeking to bring about smoke control efforts across the river in Illinois and thus prevent the drifting of smoke from East Side plants into St. Louis.

Housing Controls Eased, Foley Succeeds Wyatt At NHA

IN RESPONSE TO widespread pressure from builders, real estate organizations and Veterans' associations, the President on December 14 announced several modifications in the Housing Program, all in the direction of decontrol. After the action had been taken, most of the interested groups expressed disappointment in that they had expected more liberalization, while the Veterans were unhappy because too much building material was to be allowed to go into non-housing construction and non-Veteran homes.

Wilson Wyatt, housing expediter and administrator of N. H. A., had resigned some days previously, believing that the forthcoming relaxing of controls would sabotage the program. Norton Long, deputy expediter, also announced that he would resign. Raymond Foley, Federal Housing Administrator, was appointed head of National Housing Agency, and Frank Creedon is the new housing expediter.

Some of the program changes were announced only in broad terms, with details to be developed. Briefly, the changes are:

Anyone may build a home at whatever cost he can afford.

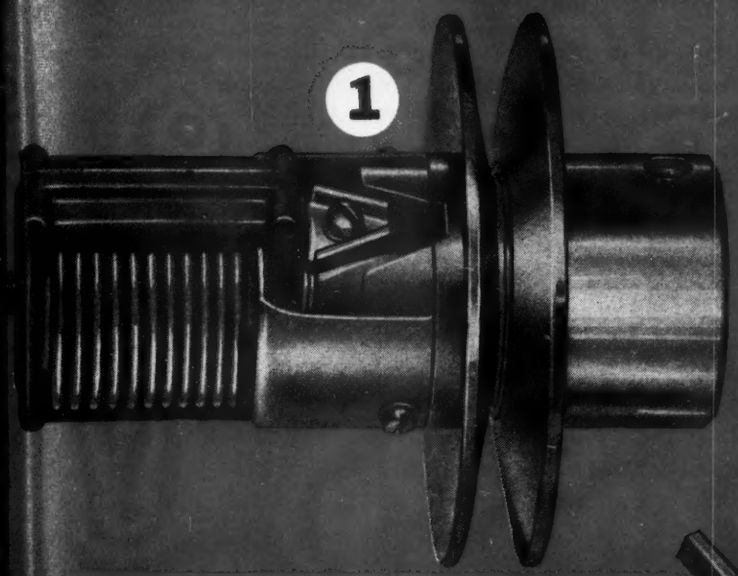
If the home is to be sold or rented, Veterans must be given first choice.

With no dollar limit on home cost, they will be kept fairly small by a limit on floor area, expected to be announced as about 1,500 sq. ft.

Rental limit of $80 need no longer apply to an individual house or apartment; instead, it can be the average price within a building group.

Non-residential building will be allowed in about 40% greater volume than previously, expected to be $50 million a week instead of $35 million.

Priorities were dropped all around, except that "some allocations will be continued for scarce raw materials." This is indefinite, probably will not immediately be clarified; such details take time to work out.



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Thermodrive

Thermodrive is designed to regulate warm air flow through control of fan speed in a forced warm air heating system so as to give more even room temperatures, along with more economical heating performance. It is mounted on the fan motor shaft in place of the fixed driving pulley.

A sample of warm air is continuously taken from the bonnet through a control duct and discharged over a thermostatic bellows, which in turn actuates a sliding sheave. This changes the pulley's effective diameter and results in the increased or decreased speed of warm air flow.

Webster Electric FUEL UNIT

Years of satisfactory service have built the enviable reputation for top performance and dependability enjoyed by Webster Electric Fuel Units.

This two-stage unit design continuously purges small air leaks without affecting pressure conditions. It gives quiet operation under all conditions of vacuum and pressure.

Refinements in design of the duplex regulating valve give positive cut-off with steady maintenance of pressure.

In Canada, they are made by Canadian Acme Screw and Gear, Ltd., Toronto, Canada.

2

3

Webster Electric TRANSFORMER

Sure-fire, instant ignition when you want it is the result of careful engineering and painstaking manufacture of Webster Electric Transformers.

They are made with mica insulation, on high voltage coils, that does not lose efficiency with age or high temperatures. These coils are wound with exacting care and assembled on a core of nonaging laminations. A metal shield reduces radio interference to a minimum. By comparison—point for point—you'll find Webster Electric Ignition Transformers tops in performance.

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Detroit To Be Served By Second Gas Line

A SECOND NATURAL gas line, estimated to cost $90,000,000, will be built with permission of the Federal Power Commission from Oklahoma to Muskegon, Mich., and the existing lines will be enlarged to handle up to 500,000,000 cu. ft. a day. The new line will be built—probably not to be completed before 1949—by Michigan Consolidated Gas Company over the protests of the Panhandle Eastern Pipeline Company and the City of Detroit. Panhandle Eastern owns the present line into Michigan and is the Michigan Consolidated's supplier. Panhandle now is proposing to sell gas directly to manufacturers and other industries in the Detroit area.

The new line's northern end will be in fields northeast of Muskegon, close to Austin, Mich. Gas will be stored there for peak demand. From these fields it is planned to run one line to Detroit, and another to Western Michigan and the Milwaukee area. The main supply line will be 1,076 miles long.

The decision by the Federal Power Commission to allow the new line to run in competition with the existing line is believed based on the principle that a monopoly cannot be protected when it cannot supply the total demand for its product. The gas supply in Detroit has been considerably below the demand in recent years, and new customers have had to be refused service.

The City of Detroit opposed the new line on the basis that the Oklahoma gas fields have not been sufficiently proved. If there is not sufficient gas to justify the investment, it is feared that this will be used as a basis for raising rates.

◈

Year End Statement From Pew Shows 1946 a Record Year

J. HOWARD PEW, president, Sun Oil Co., Philadelphia, in a year-end statement, pointed out that 1946 had been a peak volume year for the oil industry, and predicted that 1947, barring serious work stoppages, would substantially exceed the record of '46. Typical portions of the statement are:

The industry's products, highest in quality it has ever achieved, have been abundantly available for all at costs which are at the bottom of the commodity price index. A gasoline dollar, excluding tax, in 1946 bought 48 per cent more than the food dollar, 50 per cent more than the clothing dollar and 30 per cent more than a dollar spent for all consumer items.

Production of crude oil and principal petroleum products averaged approximately 5,075,000 barrels daily in 1946, compared with a peak wartime production, in 1944, of 4,864,300 barrels daily and a pre-war peak production, in 1941, of 4,072,700 barrels daily.

The industry's production of gas oil and distillate fuels, the components containing home heating oils, was more than 50 per cent above the highest pre-war year. Production of kerosene was up more than 45 per cent; residual fuel oil, 28 per cent; lubricating oils nearly 13 per cent and other products 42 per cent.

Motor fuel production was 4 per cent higher than the peak war year, and 9.4 per cent above the peak pre-war year.

The oil industry enters 1947 in a sound condition. Proved crude oil reserves are now at the highest level in history.

THE RAPID HEAT CORPORATION

OFFERS

"THE RAPID HEAT OIL BURNER"

Wanted dealers - - - Burners available now!

INQUIRIES INVITED . . . BY LETTER—BY PHONE—IN PERSON.

A TIME TESTED BURNER UNDER A NEW NAME.

Characteristics of the Rapid Heat Oil Burner . . .

PERFORMANCE: Bowl type flame in suspension fills the entire combustion chamber producing uniform heat.

EFFICIENCY: Home owners will recognize the high efficiency of this burner.

ECONOMY: Exceptionally low operating costs made possible by a scientifically designed air mixing chamber.

INSTALLATION: Easily installed on warm air furnaces, steam, or hot water units.

CAPACITY: All capacities.

OPERATION: Nozzle never becomes clogged with carbon, no moving parts in the combustion chamber.

Substantial oil savings and the remarkably high CO^2 of the Rapid Heat Burner will increase your sales for 1947. Contact us immediately.

Also, a complete line of packaged units
Oil and gas fired air conditioning units,
Oil and gas fired steam and hot water units.

BE SURE TO SEE OUR EXHIBIT 938 AT THE 7TH ANNUAL HEATING AND VENTILATING EXPOSITION.

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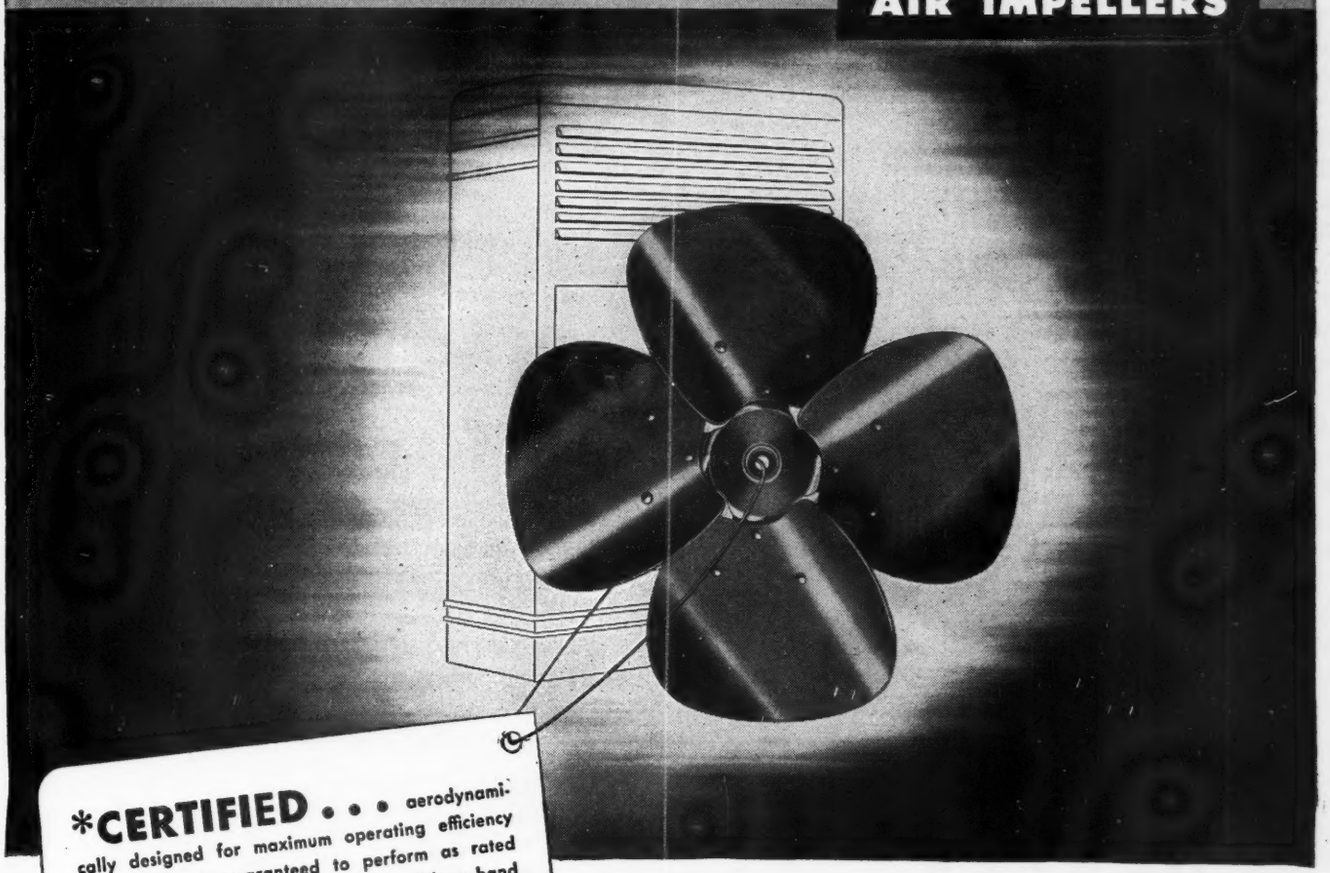
13% MORE AIR FOR COOLING . . . NOISE MINIMIZED

with the help of Torrington CERTIFIED* AIR IMPELLERS

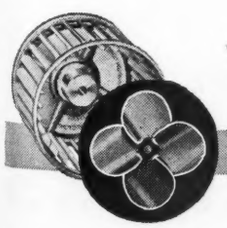


***CERTIFIED** . . . aerodynamically designed for maximum operating efficiency with quietness; guaranteed to perform as rated under NAFM and NEMA Test Code conditions; hand gauged for uniform contour, alignment and balance. The Torrington Manufacturing Company.

UNSATISFACTORY condenser cooling prompted a manufacturer of room air conditioners to see if a Torrington Fan Blade would improve the performance of his product. In Torrington's complete research and testing laboratory, the performance of this unit was checked under NAFM procedure. The 12" fan blade then being used by the manufacturer delivered 513 C.F.M. at .09" resistance, while a standard Torrington 12" fan blade delivered 555 C.F.M. at .11" resistance. And by applying the experience that goes into Certified Air Impellers, Torrington Engineers were able to recommend a design change in the orifice of this unit which boosted air delivery to 583 C.F.M. Noise was minimized.

While records show case after case where Torrington Airistocrat Fan Blades and Airotor Blower Wheels have improved product performance, you will benefit most from Certified Air Impellers by consulting Torrington while your product is still in the design stage.

Talk over your air impelling problems with the Torrington representatives at Booth 501, *7th International Heating and Ventilating Exposition*, Jan. 27-31, Cleveland, Ohio.



THE TORRINGTON MANUFACTURING COMPANY, TORRINGTON, CONNECTICUT

AIRISTOCRAT FAN BLADES • AIROTOR BLOWER WHEELS • IMPROVE PRODUCT PERFORMANCE

Fuelgas oil heat

Rule Terminal Storage Not Interstate Commerce

NEW JERSEY'S State Division of Tax Appeals has ruled (Nov. 29) that fuel oil brought into the state by tanker and stored for an indefinite period with other oil is subject to local taxation as personal property.

The opinion was handed down in a case involving fuel oil brought to the Jersey City storage tanks of Transport Terminals, Inc., by Maritime Petroleum Corp., a New York company.

Maritime contended the oil was being stored in Jersey City only temporarily, that it therefore was in interstate commerce and within the interstate commerce clause of the federal constitution. The company also claimed the oil was stored in the tanks of a New Jersey storage and warehouse company which was exempt from taxation of personal property stored with it.

Commissioner Kreamer, who wrote the opinion, said the Division of Tax Appeals concluded that the oil was not in interstate commerce. He said it was brought into the state by tankers and stored for an indefinite period or until Maritime's customers called for its delivery by tanker, rail or truck.

Quoting a State Court of Errors and Appeals decision in a similar case, Kreamer said that when the continuity of carriage in interstate commerce is broken, a product no longer is in interstate commerce and therefore is subject to local taxation.

Philadelphia Gas Rates Went Up January 1

NEARLY 22,000 Philadelphians who use gas for house heating will pay an estimated 15% more for gas since January 1. The city gas commission on November 26 approved an application for a rate increase by the Philadelphia Gas Works Company, which is estimated to mean an increase from the $148 former annual average for house heating, to $170 under the new rates.

About 10% of the city's 444,000 gas users will not be affected by the rate increase. They are the families who use 600 cubic feet a month, or less. Cooking customers will receive an increase of about 7.5% and cooking and water heating users will be increased about 9.5%.

Fall Production At High Level

OCTOBER PRODUCTION of heating equipment and parts continued at high levels, though no figures are yet available on the effect of the slow-down due to the coal strike. Year end figures may show a decline from the fall peaks.

Warm Air Peak

Warm air furnaces in October were produced at an all-time record rate, up 14% from September to 82,800 units. Production also is expected to have increased further in November. These increases are believed to be largely due to priority assistance given the industry to get steel and cast iron under Direction 18 to PR-28. This help will continue during the first quater of 1947. Furnace manufacturers still are hampered by shortages of parts such as controls, transformers and fractional horsepower motors.

Fractional motor production in Octo-

DEALERS—here's a FLOOR FURNACE you can sell and forget

The original oil burning floor furnace, Kresky is the only one with forced air circulation bearing the Underwriters' label. Four sizes . . . easily installed . . . takes as little as 30" clearance. ★ Altho unprecedented demands necessarily limit current shipments to old customers, Kresky invites negotiations from live dealers for territories still open.

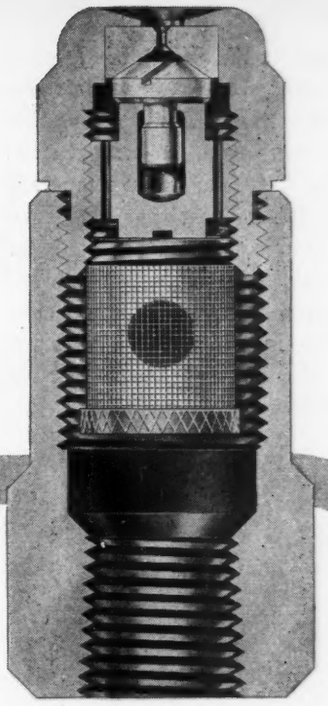
Listed by Underwriters' Laboratories, Inc. To Burn No. 3 Oil (Diesel) or lighter

KRESKY MANUFACTURING COMPANY
Pioneers in Oil Burning Equipment Since 1910
PETALUMA, CALIFORNIA

Kresky Oil BURNERS

HEATING • COOKING • HOT WATER • INDUSTRIAL

Balloffet Design NOZZLES by DELAVAN



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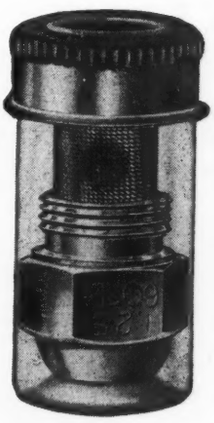
Because of Their Uniform, Dependable Performance

For great uniformity in performance; greater accuracy in rating; bettering firing results—depend on Balloffet Design Nozzles by Delavan. ● Brass body and parts dissipate heat quickly—require less service because less carbon and residue is deposited. ● Parts controlling atomization are of special corrosion resistant stainless steel. ● Patented floating distributor insures perfect alignment. ● Every nozzle tested and calibrated under standard conditions. ● Shipped in clean, dust-tight, transparent plastic containers. ● Deliveries now being made to meet all requirements. You can depend on Delavan shipping schedules.



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ber continued at the September level of 1.9 million units, which is an all-time production peak for the industry. November production is estimated to have reached the 2 million mark, in spite of temporary shutdowns due to materials shortages. While production remained high, the backlog of unfilled motor orders continued to increase from nearly 38 million to close to 40 million units in October. This still represents 21 months' production at the present high levels of output.

Water Heaters

Water heater production in October also broke all records with 322,000 units of all types. Oilfired storage type water heaters reached 20,881 in October, up from 15,655 units in September. Side arm type heaters, oilfired, increased nearly 48% during the month to reach a production of 7,588. Gas water heaters of all types reached a production level of 194,000 for the month.

Cast Iron and convector radiation output jumped 18% in October over the September level to a new postwar high of 7.45 million sq. ft., and a further increase is forecast for November.

Sees Oil Formed by Atomic Bombardment

Radon, a gas formed when radium spontaneously disintegrates, was used as the source of the alpha particles with which the fatty acids were bombarded.

The research, according to the society's statement, has shown that basic hydrocarbons found in oil can be produced by the effect of radioactivity in organic compounds by bombardment or radiation under laboratory conditions.

Whether similar conversions may take place in the organic material present in oil fields to form appreciable quantities of petroleum is still unknown.

Commission to Direct Canadian Fuel Research

HON. J. A. GLEN, Minister of Resources, has told the Canadian House of Commons that the Government has decided to appoint a fuel research board in line with a recommendation that one should be set up to "direct an over-all program of fuel research."

Piloting departmental estimates, Mr. Glen said the recommendation had been made by a special committee which reported:

"Having in mind the basic importance to Canadians of fuel problems in general and the fact that research work in the field of synthetic liquid fuels is closely related to and common to other fuel problems, your committee recommend the establishment of a fuel research board representative of the Department of Mines and Resources, the National Research Council, the Research Council of Alberta, and private industry which should direct an overall program of fuel research. Synthetic liquid fuel is one of the most urgent problems to be dealt with."

Mr. Glen said the Government had planned building of a hydrogenation plant but had appointed the committee when doubts began to crop up about its advisability.

A previous item of more than $700,000 had been dropped in view of the recommendation of the committee that further study should precede development of plans for a synthetic liquid fuel pilot plant. Only $50,000 was necessary for

ANOTHER "ANCO" PRODUCT

WE ANNOUNCE WITH PRIDE

THE ANCO OIL BURNER

Equipped with our own Anco Motor & Transformer

ANCO CREED:

EVERY PRODUCT

UNCONDITIONALLY

GUARANTEED FOR

ONE YEAR AGAINST

MANUFACTURING DEFECTS.

MODEL D-125
1-3 G.P.H.

DESIGNED FOR:

★ FINGER TIP SERVICING

★ RUGGEDNESS

★ LOW COST HEATING

★ QUIET & EFFICIENT OPERATION

Immediate Delivery

(Listed by The Underwriters Laboratories)

Motor Division:
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Main Office:
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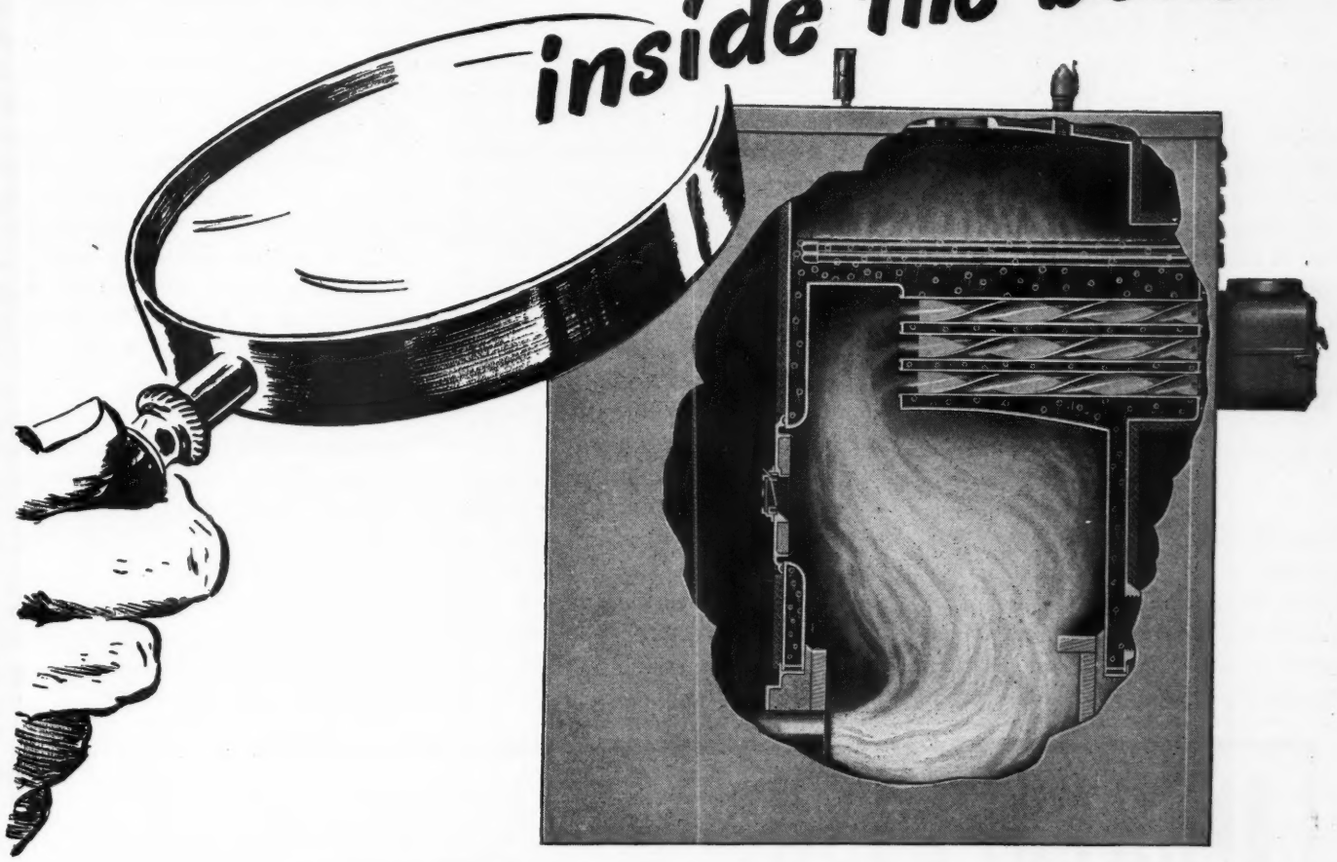
PATERSON, NEW JERSEY

Plants In:
Newark, N. J.
Wilkes-Barre, Pa.

The place to look for boiler values is *inside the boiler*



In the FITZGIBBONS 400 SERIES *here's what you see—*

LOOK into this boiler at the Heating and Ventilating Show, space 258, where it will be on display with other units of the Fitzgibbons line.

MEMBER

SBI

Reg. U. S. Pat. Off.

ALL CONSTRUCTION IN ACCORDANCE WITH THE A.S.M.E. CODE — *flange steel plate* with a minimum thickness of ¼" and minimum tensile strength of 45,000 lbs. Every boiler tested hydrostatically to 60 lbs. pressure for maximum 15 lb. steam operation. Every boiler passed by the Hartford Steam Boiler Inspection and Insurance Co. and rated in accordance with the Steel Boiler Institute.

COMBUSTION CHAMBER CORRECT IN FORM AND SIZE to promote complete burning with a hot, clean flame and the minimum of soot deposit. Providing the conditions under which any good oil burner will give its star performance.

EXCEPTIONALLY POWERFUL WATER CIRCULATION which sweeps off steam bubbles and brings ever new water molecules against the hot boiler surfaces. This is the true basis of quick steaming. In short —

ALL THE QUICK-STEAMING, FUEL-SAVING BENEFITS of steel boiler design, brought to the ultimate degree by our sixty-one years of constant improvement—The 400 Series is *all boiler* and it's *all Fitzgibbons.*

Fitzgibbons Boiler Company, Inc.

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Manufactured at: OSWEGO, N. Y.
SALES BRANCHES IN PRINCIPAL CITIES

fuelgas & oil heat

maintaining the equipment already procured. That amount was voted.

The Government is negotiating for return to Abasand Oils, Limited, of the properties and rights taken over during a wartime search for oil, Mr. Glen informed the House.

The Government undertook as a war emergency measure to finance rehabilitation of the plant near Fort McMurray, Alberta, and to carry out pilot plant operations on the mining and treatment of bituminous sands.

Mr. Glen's announcement of abandonment of the project was greeted with approval as was his announcement that the Government would continue to drill the sands in that area to continue exploration of liquid bitumen.

But that, Mr. Glen said, would be the last government operation in these fields.

◈

John B. Caldwell has been named chief engineer, Blackmer Pump Co., Grand Rapids, Mich. *L. R. DeWolf* and *V. A. Brunson* become senior engineers. All appointments are in line with an expansion program for extensive development work on the company's line of rotary pumps for industrial uses.

◈

England Called Good Prospective Market

AFTER A THREE-WEEK STAY in Britain, William Shepherd, general foreman of the sheet metal department, Williams Oil-O-Matic Div., Eureka Williams Corp., Bloomington, Ill., reports that if restoration proceeds at the expected rate, England will be a market for twenty to twenty-five thousand oilburners by 1948.

Mr. Shepherd, now a naturalized American citizen, is a native of England and this trip was his first return to England in twenty-four years. He has been an Oil-O-Matic employee for the past twenty-one years.

Food, clothing, gasoline and coal still are rationed in England and the average man expects to live in a "tightened-belt" economy for the next year or two, according to Mr. Shepherd. But, there are two chief points that tend to brighten the prospects for oilburner sales in England. First, there is an increasing consciousness on the part of the English of their backwardness in home heating methods, and a corresponding interest in central heating. All indications, observes Mr. Shepherd, are that new homes replacing bombed-out structures will be centrally heated.

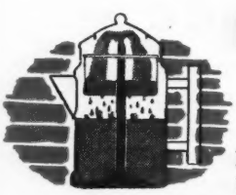
At present the British Government is doing everything possible to expedite homes for veterans before permitting any large scale commercial or industrial building. Members of the working class have more money to spend than at any time in history, with no luxuries available and necessities tightly rationed. Mr. Shepherd found an intense interest in home conveniences, lacking in England but almost commonplace in America. There has resulted an eager desire for oilburners and similar household appliances.

Mr. Shepherd reported also a lively interest in central heating in Scotland, and it is apparent that the British Isles offer a post war market far above its prewar best.

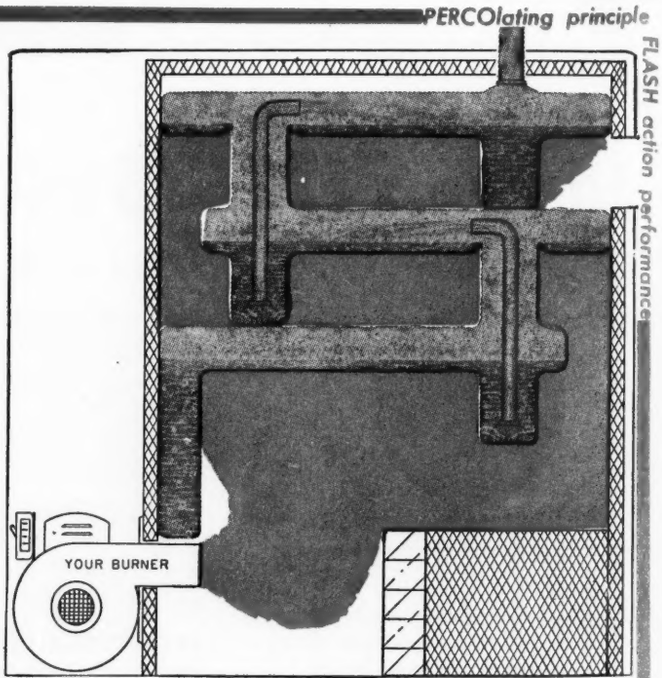
Between 1926 and the outbreak of World War II, England was a major export market, with Oil-O-Matics installed in Westminster Abbey and the Cathedrals of Canterbury and Westminster during that period.

PERCOFLASH!

Today's GREAT NEW BOILER DEVELOPMENT

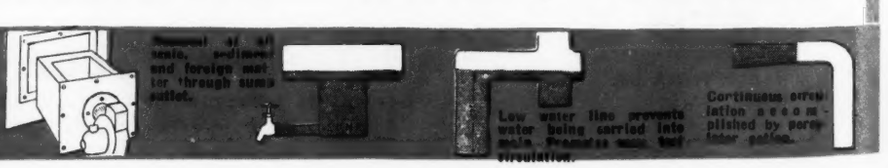


In PERCOFLASH, steam and hot water heating has now been brought to a far greater degree of efficiency through its unique percolating principle of design. Scientifically engineered to provide instantaneous generation of hot water and steam, PERCOFLASH places boiler heating on a low cost operating basis. An outstanding achievement in boiler design and construction PERCOFLASH will create interest among your customers that you can translate into real profit. Write or wire for details.



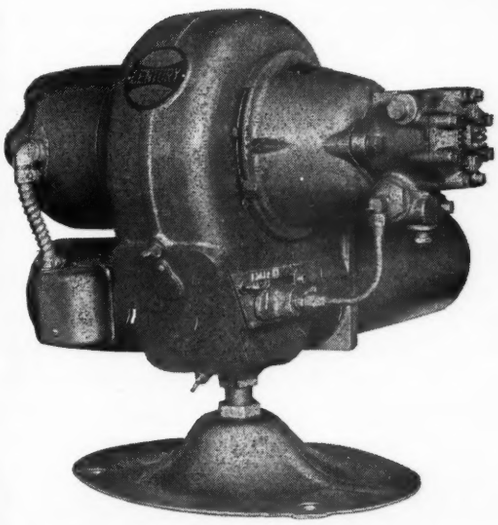
WESTCOTT-ALEXANDER, Inc.
DISTRIBUTORS, MADISON, NEW JERSEY

PERCO FLASH



CENTURY

WILL BE LOOKING FOR YOU AT



CONVERSION OIL BURNER

FURNACE BURNER UNIT

Cleveland

And there'll be a hearty welcome for every dealer visiting our exhibit at the International Heating and Ventilating Exposition. This will be a great year for Century, and we're eager to meet all of you again as you stop at Booth 845-7 to see the Century furnace units and conversion oil burners on display.

We're mighty proud of our 20-year record of integrity and service, and the way we can talk frankly with our dealers about production problems. We've never yet made a promise we couldn't carry out, and the dealers who watch their cost records closely will verify that Century equipment keeps service costs extremely low.

Check up on a Century franchise while you're at the Cleveland show, and see if you wouldn't like working with us.

Domestic water units and boiler burner units have been temporarily discontinued from our line due to material shortages.

CENTURY
Engineering Corporation
CEDAR RAPIDS, IOWA

OIL BURNERS • BOILER-BURNER UNITS • WARM AIR FURNACES
HUMIDIFIERS • WATER HEATERS • AIR CONDITIONING

fuelail oil heat

Military Govern. Estimates Japanese Oil Production

PEAK JAPANESE OIL production from wells now producing or being drilled will be slightly less than 1,600,000 barrels a year, according to estimates issued by the Military Government report released by the U. S. War Department. Present production is down, due to tornado damage, but it is expected most of this will be repaired.

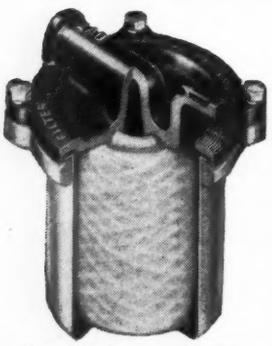
"Crude petroleum production in Japan for the year 1945-46 ending March 31, was 235,704 kiloliters (1,482,578 barrels)," says the report. "This is a drop in production of 26,435 kiloliters from the 1944-45 production of 262,157 kiloliters.

"In December 1945 a severe windstorm destroyed many derricks. Some recovery has been made in the production rate but the usual production increase in the spring has not come up to expectations.

"Production is now impeded by a shortage of repair parts for well pumps, particularly cotton for pump packings of which about seven metric tons are required annually. The Government has allotted most of the cotton and other critical materials to the industry and May and June deliveries will help to increase production.

"For the first two weeks of May daily production was 610 kiloliters as compared with 678 kiloliters a day for the postwar peak in November 1945 and 736 kiloliters a day for the average production for the fiscal year 1944-45. There are a large number of suspended producing wells which, if operating, would raise production about 10 per cent or about 62 kiloliters a day. These suspended wells plus new wells now under development could raise daily production to nearly 700 kiloliters or 250,000 kiloliters annually. Only new discoveries or important extensions could raise production further."

Leads in sales because it leads in performance!



Genuine Honeycomb Filter Tubes give true depth filtration. Remove all impurities down to microscopic size. Extra long life. Cannot rupture, channel, or by-pass. No other filter uses these exclusive patented tubes.

Meet us at Booth 651, Heating and Ventilating Exposition, Cleveland, Jan. 27-31.

FULFLO FILTER . . . Model AS-4 far outsells all others because dealers everywhere have found that when they install one they can forget about all troubles due to dirty oil.

Sales have rocketed since V-J day . . . far faster than production could be stepped up . . . This amazing demand is not due to advertising claims or laboratory experiments. It is due to the utterly dependable performance of thousands and thousands of AS-4's actually installed on oil-burners all over the country.

Material shortages, transportation difficulties, foundry congestion, coal strikes, and other obstacles to increased production have one by one been surmounted. In a very short time you can get the time-tested, thoroughly proven AS-4 just as quickly as you can get ordinary filters. Why bother with anything but the best? Insist on FULFLO FILTER MODEL AS-4 and forget dirty-oil troubles.

Commercial Filters Corporation
BOSTON 27 MASSACHUSETTS
Listed by Underwriters' Laboratories, Inc.

British Railroads Are Converting to Fueloil

FURTHER EVIDENCE of British diversion from coal to oil fuel is afforded in the decision of one of the major railway units to convert still further locomotives to oil. This follows the success of earlier experiments during which freight type locomotives were converted and run successfully on oil. Main contributing factor to the situation is the decreased volume of British coal, the poor quality of much that is produced and of necessity consumed by the users, and the increasing cost of production of coal.

All these factors urged greater consideration of oil as a fuel and will increasingly do so, not only on economic grounds, but through sheer necessity. The Labour Government has been forced to confess that it cannot obtain the required coal—through lack of cooperation by the miners—despite all the inducements offered in the higher wages, better conditions and increased mechanization. If the British are to survive as an industrial power over the next few years it will not be achieved on coal. Hence the recent decision to facilitate the conversion of industrial plants from coal to oil, and the similar trend on British railways.

Because of the shortage and rising price of locomotive coal, the Great Western Railway will use oil-burning locomotives for passenger services.

Leadership Based on Quality Products

Constant product research and advancements, outstanding laboratory staffs and facilities, Chrysler Corporation engineering and quantity production skill—all bring a high degree of dependability and public acceptance to Chrysler Airtemp products. In three important fields—heating, air conditioning, and commercial refrigeration—the name Chrysler Airtemp is the buyer's assurance of quality design and outstanding performance. There's a dealer agreement for 1, 2 or all 3 Chrysler Airtemp lines. For full information about this opportunity, write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio; in Canada—Therm-O-Rite Products, Ltd., Toronto, Ontario.

Automatically Yours

CHRYSLER AIRTEMP

HEATING • AIR CONDITIONING
COMMERCIAL REFRIGERATION

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Chrysler
Corporation

fueloil & oil heat

Readers' Forum

FUEL OIL AND HEATING COUNCIL, INC.
Brooklyn 11, N. Y.

Editor:

Our group, in enlarging its program of "Oil Heat is the Best Heat" and desiring to present to the public in the Metropolitan New York area the assurance that the industry is vitally interested in more satisfied users of oilheat, is working out a standard pattern of oilburner maintenance in conjunction with the sale of fueloil.

In offering a maintenance plan the Council is aware of the impossibility of free oilburner service, as such. The experience of reliable operators over a period of years points up the necessity for satisfied users and a minimum of customer turnover. Where the customer is fully aware of how much he is paying and what he gets for his money, there can be no misunderstanding.

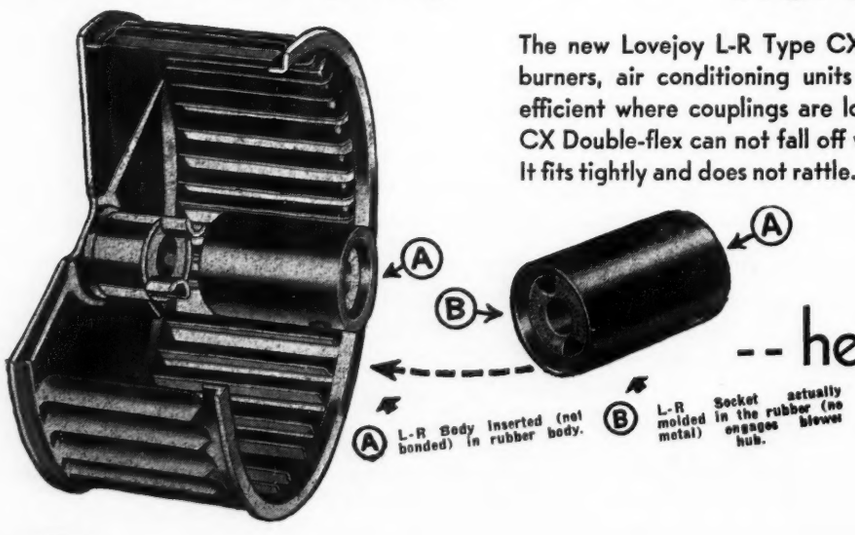
It is hoped, for the good of oilheating, that the industry will adopt a plan of an annual contract, to include labor—parts—summer clean up of burners and a vacuum job. This latter part of the service contract is important and often is passed over too lightly. The fueloil and burner dealer is selling heat,—"Automatic Oil Heat," and this means the entire heating plant must be in excellent condition for continued satisfaction. It is unnecessary to present technical facts regarding loss of efficiency with soot formation, or heat losses, as they are already well known. But it is well established that this part of job is essential and is recognized by competitive fuels, not only from the standpoint of requiring that the heating plant be in proper condition but insisting that an insulation job be done as well. Experience of a number of dealers, gained from the period of fueloil rationing, shows that most properly installed and serviced oilburners, produced sufficient heat on the quantities of oil allowed, while on the other hand, a great many oilburner users had to request extra allowances.

Oilburner service must be streamlined to provide quiet, smooth, uninterrupted operation at economical cost. This can be achieved by a determination on the part of everyone in the business to see that each installation on the company's books is thoroughly checked and all faults corrected. If this was done, going back to the earliest installation and working forward to the newest job, there could be no displeased customers. Don't think this can't be done. Remember the best source of new business is from people well served. There can be no question of the good results obtained from effort along this line. When each job has been checked, cleaned and put in good operating condition a maintenance or service contract offered at that time will not only keep the burner operating properly, but will eliminate, to a marked degree, a lot of unnecessary calls at a future date. Service department costs will drop and there will be an increase in the number of highly satisfied users of oil.

These simple facts are well known to men in the business and doubtless a great many have at one time decided to follow some such plan. But there it stops! The gap between desire and execution is quite wide. If the oilburner and fueloil man will stop and give a second thought to the fact, that it is very largely through his efforts that the desire and need for fueloil in the average home has been created, he can't help but realize that for the good of

LOVEJOY L-R
Type CX Double-flex
Flexible Coupling

— — here's what it is:



The new Lovejoy L-R Type CX Double-flex is a better coupling for oil burners, air conditioning units and other installations; but particularly efficient where couplings are located in the dark or close quarters. The CX Double-flex can not fall off when blower and pump units are serviced. It fits tightly and does not rattle.

-- here's what it does:

Positive correction of misalignment, shock, surge, backlash, etc. is achieved with the Lovejoy L-R Type CX Double-flex flexible coupling. Oil heating and air conditioning engineers and servicemen say it is quickly assembled and easily installed.

Get all the details in Bulletin 520

OHI

LOVEJOY FLEXIBLE COUPLING CO.
5012 W. Lake Street • Chicago 44, Ill.

"smart move Mr. McWeather"

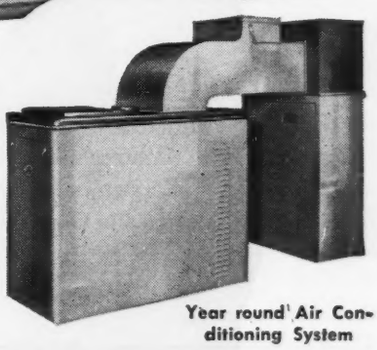
"You are making a wise decision when you expand your business to include sales and service of COOLING equipment! It is a natural, easy move for you to make. For *cooling* naturally belongs with *Heating* as a strong business-getting combination for you. And your customers will just as naturally welcome buying *both* from the same reliable dealer."

"Farsighted VIKING Dealers are leading this NATURAL trend. They are planning with their VIKING Distributors NOW, preparing to reap full advantage from a rapidly growing year-round market for VIKING'S complete heating, cooling and air conditioning lines. If you are interested in STEADY PROFITS *Twelve Months in the year,* may we suggest that you "Go and do likewise." Write today for your VIKING Distributor's name and address.

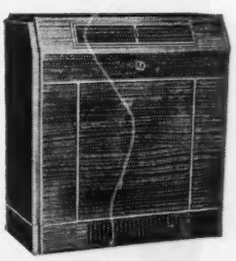
THE VIKING MFG. CORPORATION

1747 Chester Avenue — Cleveland 14, Ohio

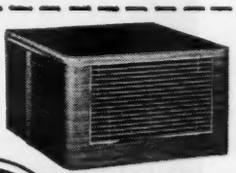
VIKING'S Cooling Line includes automatic year round Air Conditioning systems, (oil or gas fired, with cooling by refrigeration) for winter and summer comfort control — Automatic plug-in Room Coolers — Console and Window types, for homes, offices, hotels and institutions — Reach-in Refrigerators for clubs, restaurants, etc., and Commercial Refrigeration Compressor Units for replacement sale.



Year round Air Conditioning System



Console Room Cooler



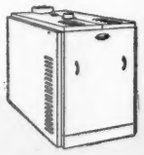
Window Type Room Cooler

WARM IN WINTER—COOL IN SUMMER

VIKING

Year round Air Conditioners

Floor Furnaces



Boilers

Oil Furnaces

Room Coolers

Domestic Stokers

Conversion Burners

Water Heaters

Space Heaters

fueloil & oil heat

his company and the industry as a whole, he must not fall short of the proper goal. In presenting the picture as a whole, it is necessary for each operator to see that his work measures up to the proper standards. Remember, if the "other" fellow permits inferior workmanship, you are affected. If not today,—then tomorrow. The days of operating in a narrow groove and being interested only in what you yourself are doing, are fast fading away. Based upon expected increases in the consumption of fueloil in the next few years, the field is wide open.

The fueloil industry has a big job ahead and this is recognized by the entire petroleum business. A start on this job is evidenced by the work of the Fuel Oil and Heating Council and the cooperation extended by its members.

FRED E. WILSON,
Executive secretary.

◈

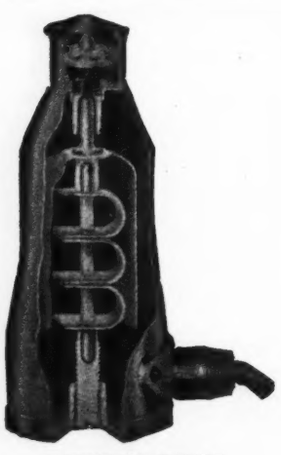
Walter F. Benoit has been named Eastern manager of sales to manufacturers for General Electric's Air Conditioning Dept., according to W. F. Karsten, sales manager for Industrial, Marine and Contractor Equipment. He will make his headquarters at Bloomfield, N. J. W. E. Johnson, manager of engineering, also announced the appointment of *Clarence O. Nelson* as supervisor of the Development and Test Laboratories at the Bloomfield works of GE's Air Conditioning Dept. A third announcement reveals the appointment of *Leonard E. Thompson* as manager of the Renewal Parts Section of GE's Air Conditioning Dept. He will be responsible for the section's operations at the Fort Wayne and Bloomfield plants, the latter where he will make his headquarters.

E. H. Stempel has joined the engineering staff of York-Shipley, Inc., York, Penna. Mr. Stempel, whose association with the oilburner industry began 21 years ago with Hardinge Bros., Chicago, also has been design engineer for Oil-O-Matic, chief designer of the air conditioning division of Young Radiator Co. and chief engineer of American Gas Machine Co. He also has been connected with AGA, Convector Manufacturers Assn. and Institute of Cooking and Heating Appliance Manufacturers.

C. L. Lockhart has been appointed manager of Shell's Sewaren, N. J., plant, it is announced by P. E. Lakin, vice president in charge of marketing. Mr. Lockhart began his career with the company in 1929, and since 1940 has been operations manager, marketing operations in the Cleveland office. *J. S. Morse*, released in February of this year from service in the Navy, succeeds Mr. Lockhart at Cleveland.

Dr. Gustav Egloff, director of research, Universal Oil Products Co., Chicago, has been elected chairman of the Petroleum Division, American Chemical Society for 1946-47. *A. N. Schanen* of Socony-Vacuum Oil Company's General Laboratories, Paulsboro, N. J. was named vice-chairman, and *Dr. Kurtz* and *W. E. Bradley*, research supervisor, Union Oil Co., Los Angeles, Calif., were chosen as members of the executive committee. The Division, with 1,300 members, is the largest of the Society's 18 professional divisions.

Nyavco
ORIFICE CONTROL



SHOWING INSIDE CONSTRUCTION

DESIGNED for OIL BURNING or AUTOMATICALLY FIRED JOBS

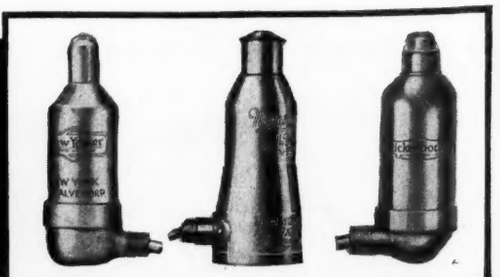
Air which fills each unheated radiator must be driven out by entering steam before heat is obtained. Using this air as a "cushion" and limiting or increasing its elimination time, the largest or smallest radiator, whether it be near or far from the boiler, can be heated at the same time, thus balancing the job.

The NYAVCO Orifice Control Air Valve, with its six variable venting ports, makes this possible. Has a definite metered disc, easily adjusted and then "locked in," thus tamper-proof. Adjustment does not depend on thread or needle valve principle.

NYAVCO vents three to five times faster than ordinary valves, because of unusually large vent port.

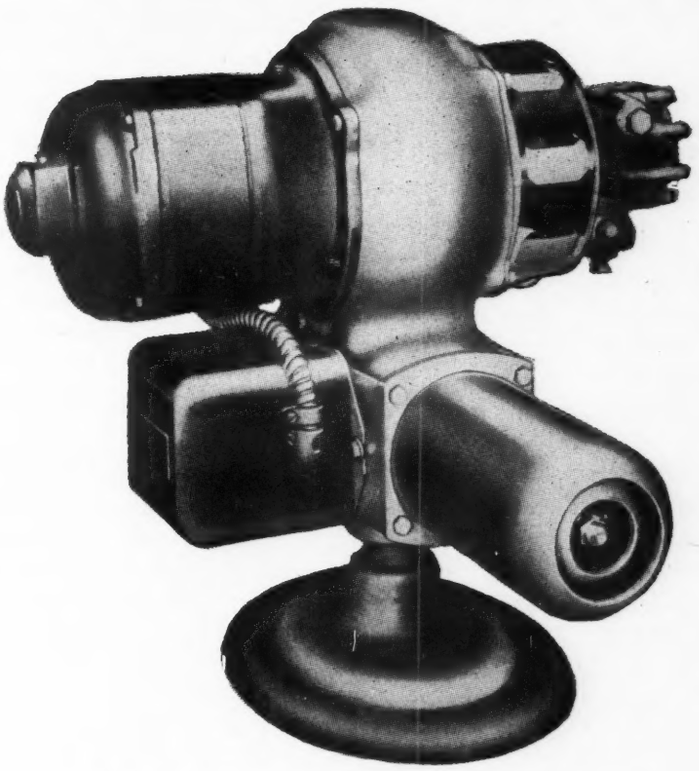
We also manufacture the "NEW YORKER" precision-made valve of sealed thermostatic float type and the "KNICKERBOCKER" of which thousands are now giving dependable service throughout the country. Send for catalog and wholesaler discount sheet.

NEW YORK AIR VALVE CORPORATION
611-621 BROADWAY, NEW YORK 12, N.Y.



NOW! For Nation-Wide Distribution ~

THE BURNER WITH THE TURBOSTAT HEAD!



A Model for Every Type of Installation

HEATING CAPACITIES						
MODEL U	Capacity G.P.H.	WARM AIR		HOT WATER	STEAM	
		B.T.U. Output at Register	Gravity Warm Air Pipe Area (sqr. in.)	Net Standing Radiation (Sq. Ft.)	Net Standing Radiation (Sq. Ft.)	Boiler H.P.
	1-3	66000-198000	450-1400	400-1250	250-800	2-9
MODEL U-F	Capacity G.P.H.	WARM AIR		HOT WATER	STEAM	
		B.T.U. Output at Register	Gravity Warm Air Pipe Area (sqr. in.)	Net Standing Radiation (Sq. Ft.)	Net Standing Radiation (Sq. Ft.)	Boiler H.P.
	1-3	66000-198000	450-1400	400-1250	250-800	2-9
MODEL U-1	Capacity G.P.H.	WARM AIR		HOT WATER	STEAM	
		B.T.U. Output at Register	Gravity Warm Air Pipe Area (sqr. in.)	Net Standing Radiation (Sq. Ft.)	Net Standing Radiation (Sq. Ft.)	Boiler H.P.
	1-5	66000-264000	450-1600	400-1600	250-1050	2-12
MODEL U-2 5-10 G. P. H.				**MODEL U-3** 10-20 G. P. H.		

Get the benefit of 18 years' field experience in your 1947 oil burners!

ACME HEAT and POWER, INC.

Manufacturers

318 Ten Eyck St. — Brooklyn 6, N. Y.

P. R. Manetta, Gen. Mgr. — **(Evergreen 8-2500)**

Industry Groups

Activities of local and national industry associations are reported monthly in this department. Secretaries are invited to send reports of their groups' activities to reach the editor by the 20th.

Wisconsin Jobbers Hear Hess

AT THE ANNUAL CONVENTION of the Wisconsin Independent Oil Jobbers Assn., held in Milwaukee December 3, Jack Hess, managing director of the Oil-Heat Institute was a featured speaker. He talked on expansion of fueloil demand through burner installations, with particular reference to smaller city and town areas. He also discussed at some length the competitive fuels picture, tying this directly to Wisconsin problems.

Recognizing the proposed introduction of natural gas into the area, Hess had this to say:

"At the close of 1940 there were, according to census figures, less than 1% of the occupied dwelling units in this state heating with gas; 7.3% were using oil and 81% were using coal or coke and it has already been suggested that four-fifths of these latter want automatic heating. Gas heating installations were concentrated and it has been the recognized high cost of gas heating which has retarded their sales. Oil heat, in various forms, more reasonable in operating cost than gas, is ahead in Wisconsin more than 10 to 1 according to the last available figures of our local correspondents.

"There is no good reason why oil shouldn't stay 'way out in front in this battle of the fuels. That statement will be equally true if and when natural gas is piped into Wisconsin. The savings once expected to result by mixing natural gas with manufactured gas are now admitted, by utility representatives, as improbable owing to increased operating costs on both labor and materials. Gas rates apparently will not hit the formerly anticipated low and there seems to be no present reason to expect that retail oil prices will be increased appreciably. Neither fuel will win the battle, in the areas where they clash for the heating market, on the basis of fuel cost alone, but, until natural gas does become a real part of this state's heating picture, oil enjoys a sales advantage on the basis of the operations cost record."

I.C.H.A.M. Convention at Cincinnati December 2-4

THE INSTITUTE OF COOKING and Heating Appliance Manufacturers held its 14th Annual Convention at Cincinnati's Hotel Netherland-Plaza December 2 to 4, inc. Headlined in the sessions having to do with oilheating and fueloil specifications were A. D. Olds of Coleman and A. T. Atwill of Quaker, both manufacturers of vaporizing oilburners. Two Government men known to oilheating and on the program at Cincinnati were C. Muirhead of the Department of Commerce and W. Walter Timmis of National Housing Administration.

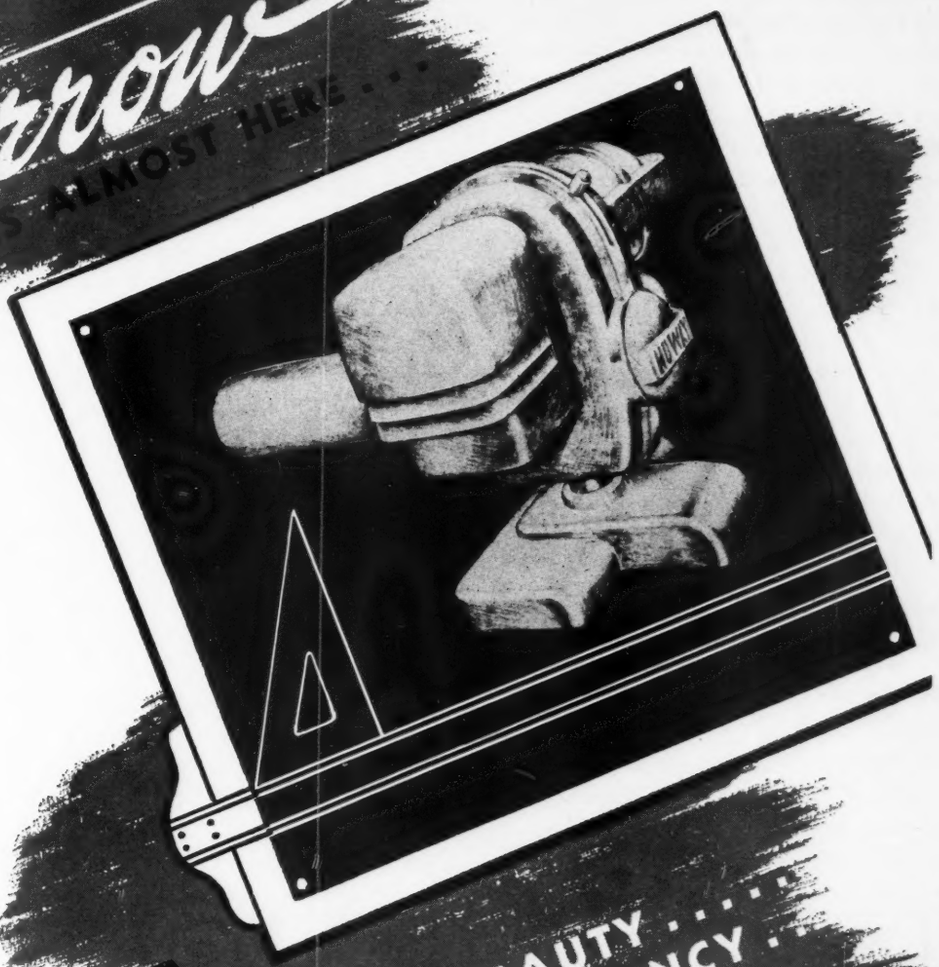
Chicago Oil Distributors Reelect Spencer and Caldwell

DIRECTORS AND OFFICERS elected at the Annual Meeting of the Burning Oil Distributors Association and the Board of Directors Meeting, December 16, are as follows:

SELL Humidified Air
with the Skuttle
AUTOMATIC HUMIDIFIERS
SERIES 300
Furnace manufacturers and dealers who recognize the importance of moisture in the home, find the Skuttle Model 300 Series Automatic Humidifiers ideal for any type or size of home. It features the adjustable rear support, adjustable collar, large inspection door and a size range from 18" to 30".
For full information and prices write today!
4099 BEAUFAIT
Skuttle Mfg. Co.
DETROIT 7, MICH.

Tomorrow

IS ALMOST HERE . . .



Combining BEAUTY . . . EFFICIENCY . . . ECONOMY . . .

It won't be long now! Tomorrow—with its new designs for comfortable living—is almost here! Nu-Way designers and engineers have been hard at work at their drafting boards and in their laboratories creating for you a new line of Nu-Way oil burners which will combine beauty, efficiency and economy

Watch for the new Nu-Way automatic oil heating units. They're worth waiting for!

THE *Nu-Way* CORPORATION

QUALITY OIL BURNERS SINCE 1921

SERVING DISTRIBUTORS, FURNACE AND BOILER MANUFACTURERS

ROCK ISLAND, ILLINOIS, U. S. A.

fuel oil & oil heat

Elected as Directors to succeed themselves in office to serve for terms of two years, commencing with 1947. Frank E. Spencer, Spencer Petroleum Co.—Division of Socony-Vacuum Oil Company; J. Loeffler—Commerce Petroleum Company; R. E. Curran—Suburban Oil Company; C. R. Jonswold—Arrow Petroleum Company.

Officers elected for the year 1947: President—Frank E. Spencer; Vice-President—Carl R. Jonswold; Corporate Secretary—I. L. Schurman, Consumers Petroleum Company (an office created by a recent Amendment to the Association By-Laws); Treasurer—D. G. Malone, Petroleum Heat & Power Company.

F. B. Caldwell was appointed Executive Secretary.

Oregon Fuel Merchants Assn. Completes Mileage Cost Study

THE OREGON FUEL MERCHANTS ASSN., Portland, recently announced that its Cost Finding Committee had completed its study of truck mileage costs from questionnaires sent in by members. Average mileage cost is found to be 16¢, not including driver wages, although of course the study report goes into considerable detail.

Wisconsin Association Reelects Schroeder, Mottram

AFTER BEING ELECTED to the presidency of the Wisconsin Oil-Heat Association for the fifth consecutive year, Walter J. Schroeder, Wisconsin Manager of Deep Rock Oil Corporation in Milwaukee, predicted a banner year for the oilburner and fueloil industry in 1947.

"The tremendous increase in oilburner equipment that will be available and the ever increasing demand for fully automatic oil heat, leaves us nothing to fear," he said.

"Oil-heat has always been the favorite of the people of Wisconsin as is indicated by the more than 5 to 1 preference of those who have installed automatic home heating. With equipment soon to be available in large quantity, and with the tremendous public acceptance, there is no reason why it should not stay out in front."

Other officers elected were J. L. Savage, Vice President; John Weiler, Treasurer; George Hochstein and Emery McNeil, directors for one year; Howard Elder and Charles N. Smith, for two years; and Harry Klingsporn and C. A. Gorder, for three years.

Harold M. Mattram was reappointed as Executive Secretary.

At the Association's annual Industry Dinner Rally to be held on January 31 the speaker will be Robert Gray of FUEL-OIL & OIL HEAT, New York.

New Officers and Directors For New York Oil Heating Assn.

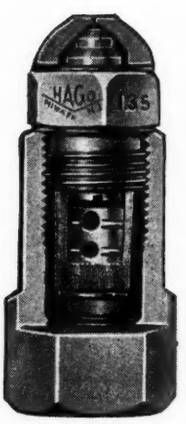
AT ITS ANNUAL MEETING December 19, the New York Oil Heating Assn., Inc., elected a new slate consisting of principal officers and directors. The new president is Joseph Reiss of Brooklyn, vice-president is Albert Evans of Brooklyn, treasurer is Joseph Ross of Manhattan, secretary is Anthony J. Sbare of the Bronx, sergeant-at-arms is Leon Bonfiglio.

Directors elected or reelected were R. V. Perotto, Harry L. Bloomberg, Joseph Carini, George Knittel, Hyman D. Rapps, Reiss, L. G. Brown, Bonfiglio, B. W. Grant, Sbare, Phillip A. Mitchell,

PRECISION IS OUR WATCHWORD!

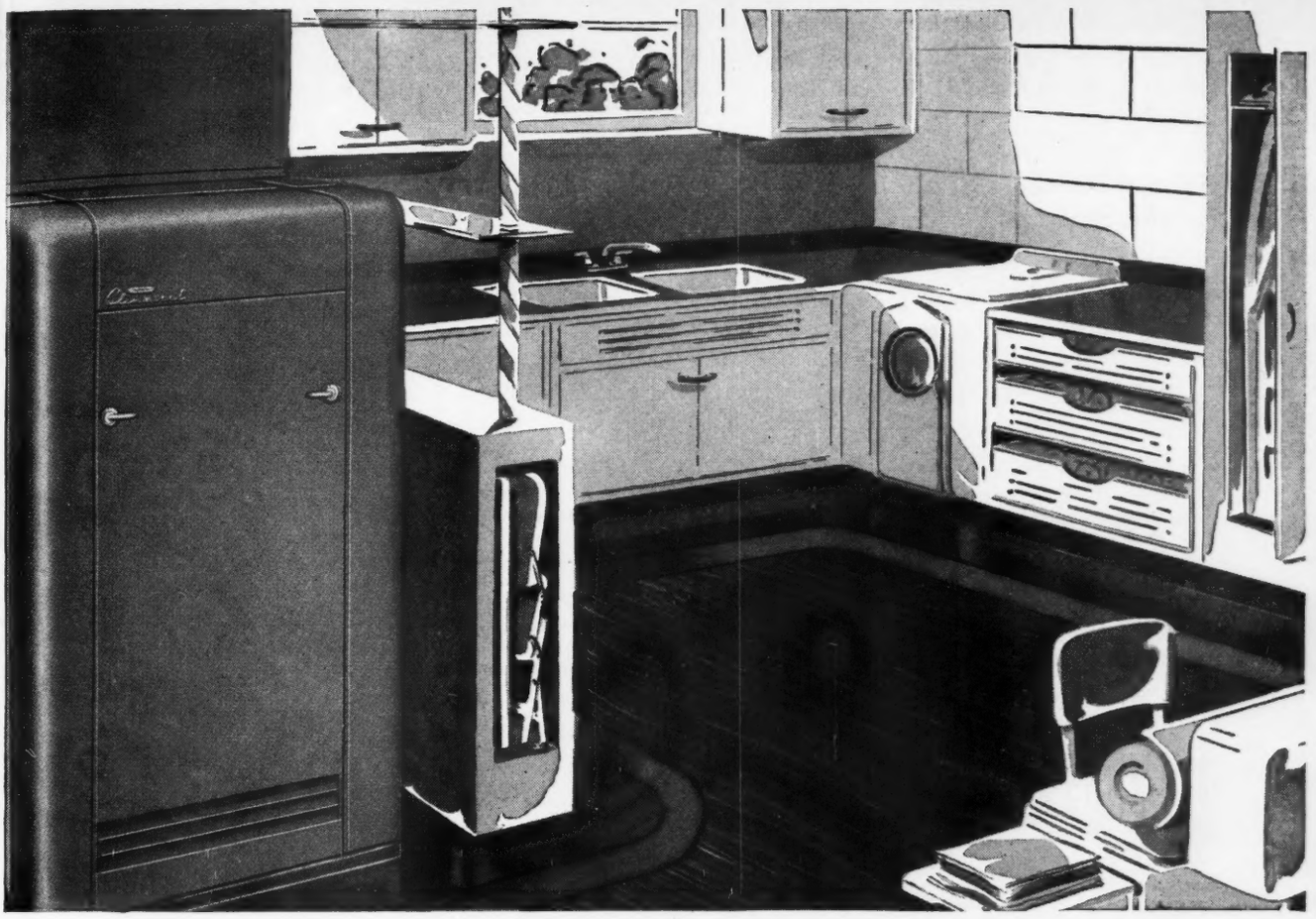
PERFECT PERFORMANCE,
ACCURATE CAPACITY RATINGS
AND SPRAY ANGLES
ARE THE NATURAL RESULTS OF OUR
PRECISION WORKMANSHIP.

IN THE NOZZLE FIELD



PRECISION MEANS HAGO!

Hago Products, 1281 Springfield Ave., Irvington 11, N. J.



F-32

Every Climatrol installation wins you a satisfied customer . . . by delivering the True Indoor Comfort of "*climate control*"

Every time you install a Mueller Climatrol unit, you can be sure of providing True Indoor Comfort — and you can count on the goodwill of another satisfied customer as a valuable asset for a long time to come.

True Indoor Comfort depends on the condition of the air in the home. That is why Mueller Climatrol is basically designed to provide indoor "climate control" by *conditioning and handling air.* Climatrol meets today's high Indoor Comfort standards, but more than that —each Climatrol unit is designed to be adapted easily to future air-conditioning developments.

Current Climatrol models are smart and modern in appearance, styled to win the approval of today's design-conscious home-planner. The Mueller line is nationally known and nationally advertised — backed by 90 years of specialized experience in providing home comfort. The Mueller line enables you to recommend the exact model to fit every requirement — each model specifically designed for efficient and economical operation with oil.

It pays to recommend Mueller Climatrol for True Indoor Comfort.

Write for bulletins.

L. J. Mueller Furnace Co.

2009 W. Oklahoma Ave. Milwaukee 7, Wisconsin

MEMBER NATIONAL WARM AIR HEATING AND AIR CONDITIONING ASSOCIATION INDOOR COMFORT

MUELLER Climatrol

Reg. U. S. Pat. Off.

fuelfoil oil heat

Mathew H. Conviser, William Mannion, Murray Leiblich, E. B. Lipsett, Philip Hoffman, Thomas F. Hanney and D. J. Buckley.

OHI Distribution Division Delivering Seals and Posters

IN A RECENT BULLETIN to members, the Distribution Division of Oil Heat Institute announced that it was ready to distribute to members the seal type and poster type decalcomanias authorized at a fall meeting. The seals are of five and ten inch size and show Institute membership, while the posters carry a slogan, "Enjoy Oil Heat . . . Clean—Economical."

API Marketing Men to French Lick April 1-2

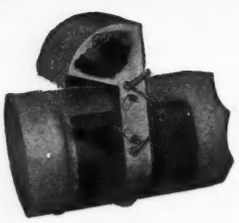
THE GENERAL COMMITTEE of the Marketing Division of the American Petroleum Institute will meet at French Lick Springs Hotel, French Lick, Indiana, April 1 and 2. All executives and representatives of petroleum marketing companies and associations are invited to attend the sessions. B. L. Majewski of Deep Rock Oil Co., Chicago, is chairman of the Division and P. E. Lakin, Shell Oil Co., New York, is program chairman.

CSE BAROMETRIC DRAFT CONTROLS

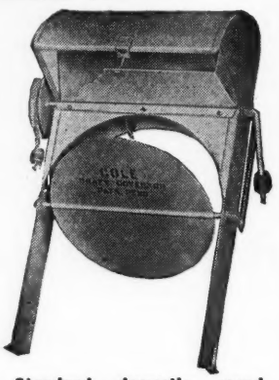
Fuel-Saving Starts With CONTROL

FOR SATISFIED CUSTOMERS . . . INCREASED PROFITS

Cole DRAFT Governor



Especially designed for oil, coal, and gas fired heating and power plants. Domestic, commercial, industrial . . . any size. Fully automatic, simple, positive instant opening at the starting of automatic firing devices. Assured fuel saving up to 35%.

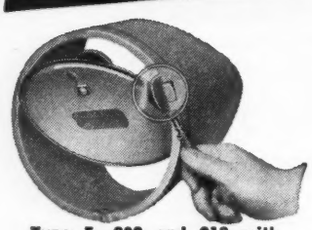


Standard domestic round Cole Draft Governor (Cut out to show working parts)

Standard domestic round Cole Draft Governor. Type A, as shipped.

EXTRA SALES IN THE BIG DOMESTIC MARKET

Draft KoreKtor



A low cost, open check draft control. For coal or oil installations, automatic or hand fired . . . stove and space heater models. Precision built. Close fitting blade swings on knife-edge pivots, convenient outside draft adjustment.

Type F, 909 and 912 with universal sleeves to fit standard pipe sizes 8" to 12".

Type F, 906, 6" for stoves and space heaters. Shipped as shown with long tee side.

COLE-SEWELL ENGINEERING COMPANY

2288 University Ave. St. Paul 4, Minnesota

BOOTH 339
7th I. H. & V Exposition
Jan. 27-31, 1947
Cleveland

CSE BAROMETRIC DRAFT CONTROLS

Indoor Climate Institute Goes on Inactive Basis

INDOOR CLIMATE INSTITUTE, through its managing director Walter P. Davis, announced December 1 it would be on an inactive basis, pending determination of the effectiveness of individual promotional efforts of the various segments of the heating industry. All officers and directors of the Institute will remain in office, and an adjustment will be made to members who have paid current dues.

Mass. Oil Heating Assn. Hears Wat Tyler of Shell

AT ITS 140TH regular monthly meeting the Massachusetts Oil Heating Assn. had as principal speaker Wat Tyler, division fuel manager for Shell Oil Co., Inc. He explained the operation and efficiency of the Shell combustion head for burners. The meeting was held Dec. 16 at Boston's Fox & Hounds Club.

The next regular meeting will be at the same place January 21 and the speaker will be Robert Gray of FUELOIL & OIL HEAT, New York.

New Fueloil Association Formed in Eastern Maine

EASTERN MAINE FUELOIL DEALERS ASSN. held its first meeting December 11 in Bangor, with membership consisting of dealers from Bangor, Brewer, Pittsfield, Old Town, Newport, Dexter, Winterport and Hampden.

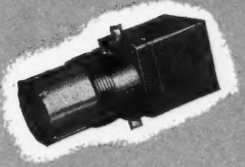
Harold Robinson of Bangor is the group's first president, Albert Landry is vice-president, James Stanley is secretary-treasurer. Directors are Leo Brown, John Connor, Stanley Fish, Henry Staples and W. J. Hamel.

Nebraska Oil Men Hold Annual Meeting

NEBRASKA PETROLEUM MARKETERS, INC., held its 26th Annual Convention at the Paxton Hotel, Omaha, on December 3 and 4. W. R. Schaefer of Omaha was elected president, succeeding O. J. Shaw of Lincoln, and H. H. Hahn reelected executive

Protective Devices by WATTS for LOW PRESSURE STEAM HEATING BOILER INSTALLATIONS

89 LOW WATER CUT OFF



93 LOW WATER CUT OFF

101 LOW WATER CUT OFF

73 CIRCULATION CONTROLLER

60 LWD—BOILER WATER FEEDER

71 TEMPERING VALVE

1st SELECT PROVEN PROTECTIVE-CONTROL Devices that Fit the Job

• • •

2nd STANDARDIZE ON WATTS DEVICES THROUGHOUT THE SYSTEM

• • •

3rd BUY WATTS UNITS AS A GROUP

• • •

Standardization Pays

For any type low pressure steam heating boiler installation, WATTS has the proper PROTECTIVE-CONTROL devices for the job.

SPECIFICATIONS

WATTS NO. 89. . . . Low Water Cut-off for gauge glass installation. Complete with improved connectors and fittings.

WATTS NO. 93. . . . Popular built-in type Low Water Cut-off to fit any boiler with 2½" pipe tapping.

WATTS NO. 101. . . . Deluxe built-in type Low Water Cut-off with sediment chamber for boilers with 2½" tapping.

WATTS NO. 60LWD. . . . Combined Boiler Water Feeder and Low Water Cut-off for smaller sized boilers.

WATTS NO. 71. . . . Domestic hot water service Tempering Valve. Set to deliver 140°.

WATTS NO. 73. . . . Circulation controller directly controls tank water temperature below 160° F.

WATTS *Automatic* TEMPERATURE *and* PRESSURE REGULATING SAFETY DEVICES
PROTECT-CONTROL

MANUFACTURERS OF

TEMPERATURE AND PRESSURE RELIEF VALVES · PRESSURE RELIEF VALVES · VACUUM BREAKERS · PRESSURE REDUCING VALVES (WATER, AIR, STEAM) · LOW WATER CUT-OFFS · BOILER WATER FEEDERS · TEMPERING VALVES · HOT WATER HEATING UNITS

WATTS REGULATOR COMPANY; Lawrence; Massachusetts

secretary. One new director, Glenn D. Martin of Falls City was elected for a three-year term. The principal program speakers were Clay Wright, chief of the state's Division of Motor Fuels; John Ainlay, secretary, Nebraska Petroleum Industries Committee; J. A. Erickson, president, The IC System; J. E. Chandler, manager, Independent Refiners Service Corp.; B. L. Majewski, API's vice-president in charge of marketing and president, Deep Rock Oil Corp.; Arch Stafford, and R. F. McConnell, marketing vice-president, Standard of Indiana.

OHI of New England Distribute New Seal

THE OIL HEAT Institute of New England at its Directors' Meeting on November 13 authorized members to display an official seal. Electros to reproduce the seal on stationery and advertising copy are now available. Decalcomanias in larger sized, suitable for trucks and show windows, will be available soon. The seal is circular with inscription around the rim carrying the full name of the association. The center has a dark field with white inscription, "Symbol of Reliability."

SEE HOW KLEEN-FLO CLEANS UP OIL BURNER SYSTEMS

—Reduces Service Calls—Eliminates Call-Backs. Dependable—Labor Saving —Economical.

Clears smoky oil fires—Reduces Carbon Deposits. Keeps oil lines and storage tank Clean. Try Kleen-Flo on one of your "Tough" Service Jobs.

COMBUSTION UTILITIES CORPORATION
1451 BROADWAY NEW YORK 18, N. Y.

Canadian Division
1253 McGill College Ave., Montreal 2

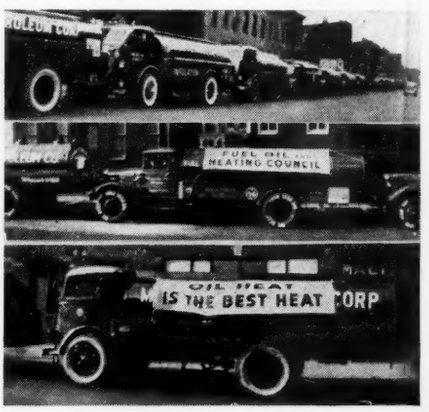
New England Distributor
ALLIED APPLIANCE COMPANY
111 Berkeley Street Boston 16, Mass.

West Coast Distributor
DIAMOND OIL CO., INC.
550 Bauchet St., Los Angeles 54, Calif.

Brooklyn-Queens Group Parades Fueloil Trucks

ON SATURDAY MORNING, December 14, a tremendous roar of trucks started up from the vicinity of Grand Street, corner of Bushwick, in Brooklyn. The roar emanated from the motors of fifty large oil trucks, lined up for the big motorcade sponsored by the Fuel Oil and Heating Council, an association of fueloil and heating dealers of Brooklyn, Queens, and Long Island.

Purpose of the motorcade, according to N. R. Skaggs, President of the Council, was to boost the morale of the coal shortage worried people of New York, by offering a visual demonstration that fueloil is always dependable and available. Full



cooperation of the police was granted and a convoy of motorcycle police led the way.

At a signal the cavalcade of giant trucks started on a winding route through the major populous areas of Brooklyn and Queens. Assembling in the Williamsburg section, the parade of trucks, bedecked with banners, streamers, and placards, motored through Flatbush, Midwood, Bay Ridge, Brownsville, East New York, and then on into Queens where it covered the main thoroughfares before disbanding at the Long Island City entrance to the 59th Street Bridge. The parade lasted about four hours.

Buffalo Association Elects

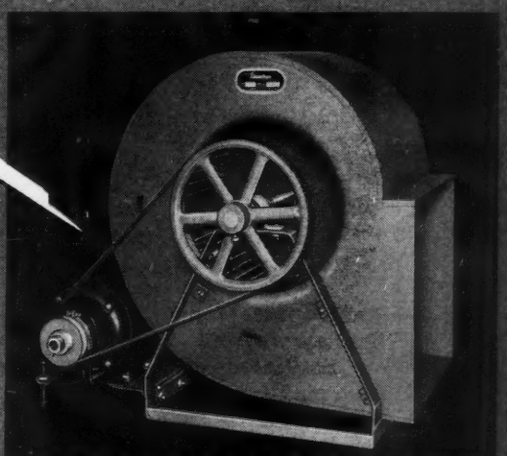
NEW OFFICERS OF THE Buffalo Retail Fueloil Assn. elected at its recent annual meeting are John Hill, president; Dale McArthur, vice-president; Jesse Tromanhauser, secretary-treasurer; Larry Franz, corresponding secretary. Directors are Edwin Schack, Richard Rasmus, Albert Schesser, Theodore Kurkowski, William Hartman and George Horbett.

Brundage BLOWERS

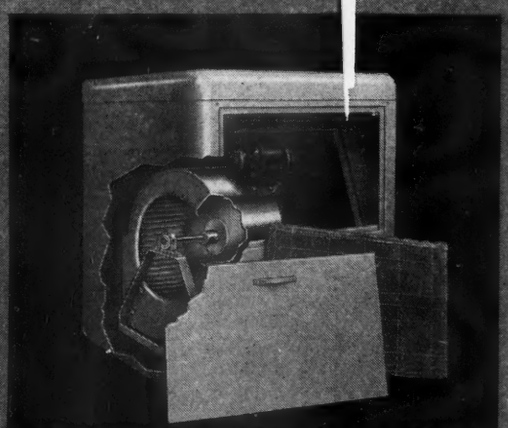
BETTER DESIGNED

BETTER BUILT

BETTER ENGINEERED



PDRM Assembly, heart of the forced warm air heating system.



Cut-away view of Brundage package unit, showing assembly and filters.

Because of their reliability of performance, *furnace manufacturers* who wish to attain maximum efficiency from their forced warm air heating units, ask for Brundage Blower Assemblies . . . Whether its a conversion job or the installation of a new heating plant, *dealers* ask for expertly styled Brundage blower-filter cabinet units to give their customers maximum comfort together with the assurance of dependable, economical operation.

THE Brundage COMPANY

Blower Specialists Since 1919

KALAMAZOO 11, MICHIGAN

I-B-R Folder Outlines Test History and Procedure for Boilers

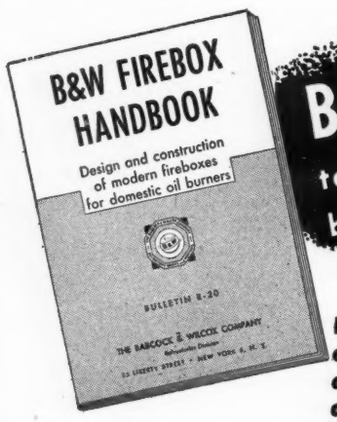
"WHAT DOES I-B-R MEAN TO YOU?" has been mailed by The Institute of Boiler and Radiator Manufacturers to 42,000 heating contractors, wholesalers, builders, and architects.

The publication tells the history of the I-B-R Testing and Rating Code for Low Pressure Heating Boilers and the details as to how I-B-R Ratings are determined and approved.

Information contained in the brochure covers the reasons for the development of the code which came into being because boiler ratings were not based on any recognized standard and, thus, were subject to question. The members of the industry decided to provide, through The Institute of Boiler and Radiator Manufacturers, reliable and uniform procedure for measuring the performance of boilers.

Ratings are based on actual output under test, regardless of design, heating surface, or grate area. The purpose of The Institute's code is to insure to heating engineers, architects, builders, the trade and consumers that heating boilers would actually deliver the output which is stamped on the boiler nameplate when such ratings are accompanied by the I-B-R emblem.

The I-B-R ratings may be used by any manufacturer of cast iron heating boilers who has conducted output tests according to the provisions and limitations of the code, subject to review and approval of qualified and impartial heating engineers. A manufacturer does not have to be a member of The Institute in order to use the I-B-R emblem and ratings.


B&W FIREBOX HANDBOOK
Design and construction of modern fireboxes for domestic oil burners
BULLETIN B-20
THE BABCOCK & WILCOX COMPANY

B&W HANDBOOK tells how to build profits by building better fireboxes

Profits depend on satisfied customers, and satisfied customers depend on durable, efficient fireboxes that give quiet, soot-free, smokeless performance.

An important step toward clean, efficient combustion with all grades of oil, including the heaviest distillates — is to design your fireboxes to heat up quickly and to give higher flame temperatures. Thousands of installations have shown that this can be achieved by building properly designed fireboxes with B&W Insulating Firebrick—which come to temperature on the surface very quickly, eliminate soot formation, and minimize furnace losses.

To help you realize peak efficiency from your installations, Babcock & Wilcox has prepared the B&W Firebox Handbook: 32 pages packed with factual firebox information. This free handbook contains many "hot tips" about all types of installations, and details many special firebox design features. It shows the way to cleaner burning, quieter operation, higher efficiency, lower oil bills for the burner user—and to fewer service calls and more customer satisfaction for you.

Write today for your free copy of the B&W Firebox Handbook which shows how to get maximum heating performance with any fuel.

R-255

Water-Tube Boilers, for Stationary Power Plants, for Marine Service . . . Water-Cooled Furnaces . . . Superheaters . . . Economizers . . . Air Heaters . . . Pulverized-Coal Equipment . . . Chain-Grate Stokers . . . Oil, Gas and Multifuel Burners . . . Seamless and Welded Tubes and Pipe . . . Refractories . . . Process Equipment.

BABCOCK & WILCOX

THE BABCOCK & WILCOX CO.
REFRACTORIES DIVISION
GENERAL OFFICES: 85 LIBERTY ST., NEW YORK 6, N.Y.
WORKS: AUGUSTA, GA.

N. Y. OHOT Holds First Annual Dinner Dance

A CAPACITY CROWD was expected at the first annual dinner dance of the Oil Heat Old Timers, Inc., New York, at the Sheraton Hotel, January 11. The local Group had limited ticket sales to 75 couples, and had refused single ticket sales. The affair was run by a committee composed of John J. Morro, Joe Ross and Bill Brown.

◈

Clyde G. Beebe and *E. P. Murr* have joined the field force of Harvey-Whipple, Inc., Springfield, Mass. Mr. Beebe will cover upstate New York, contacting Master Kraft dealers from his headquarters in Buffalo, N. Y. He has been with

Murr

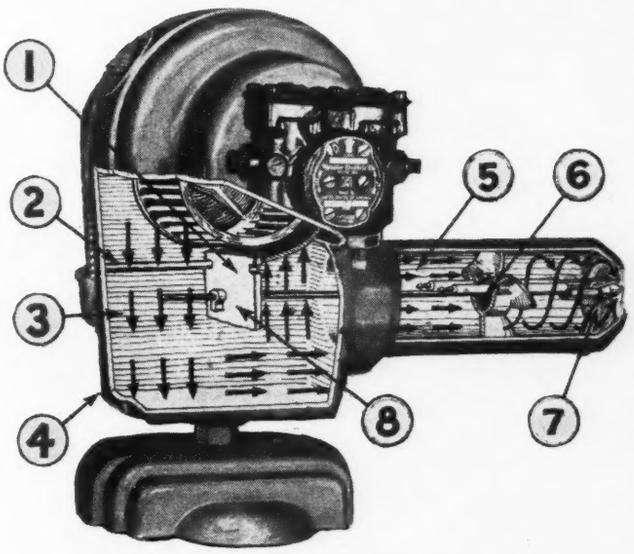
Beebe

the heating industry for 20 years in western New York. Mr. Murr will make his headquarters in Denver, Colo., and will represent Harvey-Whipple in the Rocky Mountain States area.

Maurice H. DeKeyser, president of M. H. DeKeyser Co., announces that the concern has moved to 12121 Mack Ave., Detroit 14, Mich., where they are occupying a new fireproof warehouse and office. *Claude P. Davis* will be in charge of distribution and sales for the company, which is a wholesale distributor of plumbing, heating and air conditioning supplies.

Dealers! — The Patented Baffle-Controlled QUIET FLAME BURNER

Finger-tip air adjustment



Baffle plate easily installed using tracks. See No. 2.

1 PATENTED QUIET FLAME BAFFLE
Controls directional flow of air and increasing length of air travel. Its location in center of housing gives it double value.

2 TRACKS
Tracks guide baffle plate, thus holding nozzle in dead center of cone turbulator. Impossible for the most careless service man to push or twist nozzle off center.

3 ARROWS SHOW DIRECTIONAL FLOW OF AIR
Studies prove a right-angle air turn is smoother, less turbulent, than a rounded turn. Permits more air, at lower velocity, because of reduced housing wall friction—an accepted principle in good air travel.

4 PATENTED HOUSING CONSTRUCTION

5 UNOBSTRUCTED OPENING
Full volume of air entering blast tube.

6 CUP TURBULATOR
Prevents blow-torch effect. Slows and turbulates air. No "blast" effect to ruin angle of spray. No flame streaks. Produces a full, soft fire.

7 CONE TURBULATOR
Specifically controls direction of air to insure proper air-oil mixture.

8 BAFFLE SECONDARY VALUES
Helps keep hot gases from back travel into motor and other parts, in back-draft chimney conditions.

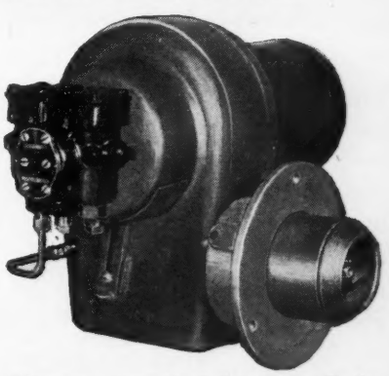
Quiet Flame Conversion Burner.

Capacities—¾ to 20 g.p.h.

FRANCHISES AVAILABLE.

REASONABLE DELIVERIES.

INSURE A PROFITABLE FUTURE!



Flange mounted burner. Only 9" front to back, but air travel is 24". Available for furnaces and boilers.

QUIET FLAME BURNER CO.

3614 E. Tremont Ave. **Bronx 61, N. Y.**

Manufacturers Activities

More Eastern Oil for Esso

COMMENTING ON PRESS DISPATCHES from London, Standard Oil Company (New Jersey) has confirmed that a preliminary agreement has been reached with the Anglo-Iranian Oil Company whereby Jersey would purchase substantial quantities of crude oil from Anglo-Iranian over a period of twenty years.

This agreement, it was said, provides for prior investigations of the possibility of constructing a pipeline, to be owned in part by Jersey, from the Persian Gulf to the Eastern Mediterranean. It is expected that under such a contract the volume of Jersey's crude oil purchases would increase gradually over the period of the agreement to meet the expected increase in world demand for petroleum products.

Jet Oilfurnace Gets Publicity in *Life*

WIDE PUBLICITY was given a new oilfired warm air furnace unit to be known as "Jet-Heet," when *Life* devoted two and a half pages of text and pictures to it in the December 16 issue. It is expected that full details will be ready for publication in the February issue of FUELOIL & OIL HEAT. Production of the unit is not expected before spring, and the firm hope to reach a production rate of 10,000 the first year.

The warm air unit is trunk-size with a cylindrical combustion chamber and heat exchanger. Air distribution under low pressure is planned through flexible, rubber-coated glass ducts of about 3-in. diameter. Fuel is No. 2 oil.

Calvin D. MacCracken, son of the ex-president of Vassar College, is the inventor. He helped to develop the wartime jet engine, and has applied some of the combustion principles to home heating.

Expanded 1947 York-Shipley Publicity to W. H. Long

AN ENLARGED PROGRAM of York-Shipley publicity and advertising in 1947 which will call for extensive use of national magazines, metropolitan newspapers and business papers has been placed in the hands of the W. H. Long Co., York, Pa. The agency, which has been handling advertising for the York-Shipley Industrial Division, now will also handle the advertising of the other divisions, effective January 1. The other divisions include York-Heat; General and Export Divisions at York; The New York City Industrial Branch; Shipley Co., Ltd., Toronto, Canada, and the nation-wide organization of distributors and dealers.

The expanded advertising program will use media having a readership of about 60,000,000, supplemented by local cooperative distributor-dealer newepaper advertising, direct mail, and use of the company's new 100-foot traveling display unit called the York-Shipley Show Case.

Boston Firm Making Parts For Shell Combustion Head

MODERN DIE AND MACHINE CO., Boston, has started production on parts of the new oilburner combustion head patented recently by the Shell Development Company. Working under special arrangement with Shell, the Boston concern is manufacturing all parts for the new head except air tubes, and is supplying them to burner manufacturers who have been licensed to use the device.

Maximum Flow ..All the Way!

That's ONE Reason Why Your Delivery Costs Are Lower, With

"NEWTYPE CORD"

SYNPLASTIC

FUEL OIL HOSE

Easily identified by the familiar red cover and the Goodall Cloverleaf Trademark . . . the sign of quality and reliability.

The patented kinkproof construction of "Newtype Cord", with its non-swelling oilproof tube, assures retention of the *full inside diameter*, even when hose is partially reeled or carried around sharp bends. This permits the *maximum flow* of oil from truck to nozzle . . . an important factor in cutting down delivery time. Other advantages are its lightness of weight and extreme flexibility . . . easier to carry out and reel up; and that tough red cover will take plenty of punishment. Available in all standard sizes and any required length.

Contact Our Nearest Branch for Details and Prices.

GOODALL RUBBER COMPANY, INCORPORATED

THE GOODALL-WHITEHEAD COMPANIES

Philadelphia • Trenton • New York • Chicago • Pittsburgh • Boston
Los Angeles • San Francisco • Seattle • Salt Lake City • Houston

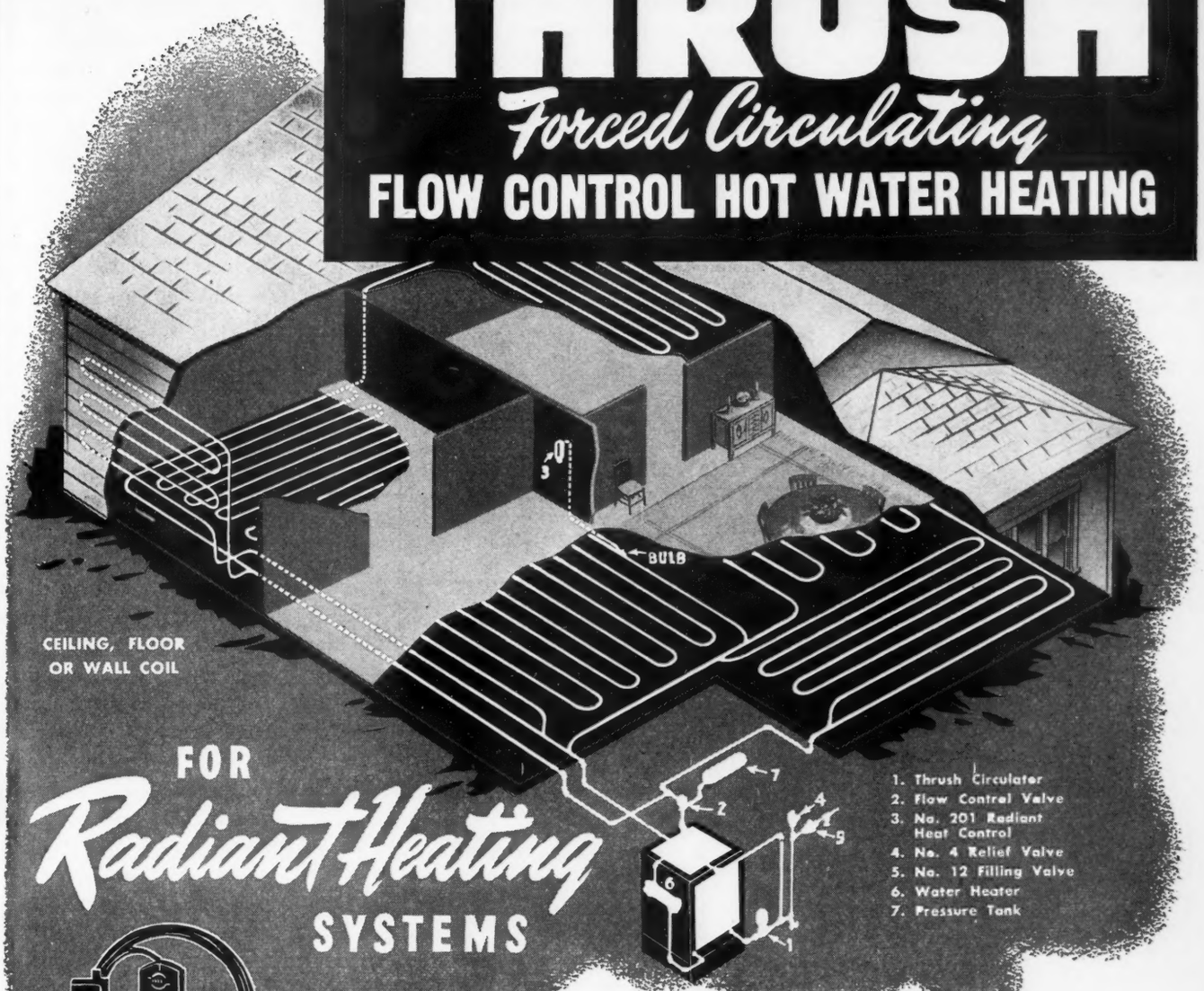
Factory—Trenton, N. J. Established 1870

WE ARE PARTICIPANTS IN THE OWNERSHIP AND OPERATION OF NATIONAL SYNTHETIC RUBBER CORPORATION

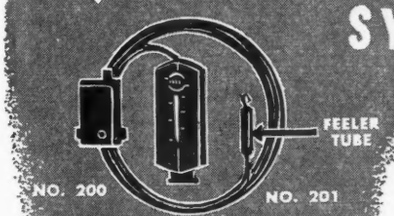
THRUSH

Forced Circulating

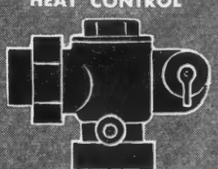
FLOW CONTROL HOT WATER HEATING



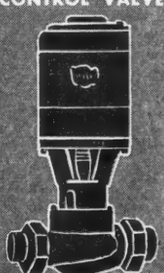
FOR *Radiant Heating* SYSTEMS



THRUSH RADIANT HEAT CONTROL



THRUSH FLOW CONTROL VALVE



THRUSH WATER CIRCULATOR

THRUSH Forced Circulating Flow Control System is the best and most economical method of controlling warm water heat. It regulates water temperature to maintain absolutely uniform comfort, night or day, regardless of outdoor weather. It provides constant Radiant Heat. The feeler tube, an integral part of the Thrush Radiant Heat Control, senses the slightest change in water temperature and acts automatically to restore room temperature before it can drop more than a fraction of a degree. Operating cost is low because continuous circulation is not required. The Thrush Circulator normally operates only a few minutes out of each hour and firing unit operating periods are shorter. For more information write Dept. C-1 or ask your Wholesaler.

H. A. THRUSH & COMPANY

PERU • INDIANA

fuelail & oil heat

The new combustion head, developed at Shell's Sewaren, N. J., fueloil laboratories, is designed to save up to 20% in domestic fuel bills and also to provide cleaner and quieter burner operation.

Skuttle Buys New Plant To House All Facilities

SKUTTLE MFG. CO., Detroit, producers of furnace humidifying equipment, recently has purchased new plant and office facilities at 4099 Beaufait, Detroit 17, Michigan, according to an anouncement by A. L. Evans, president.

The modern building, erected in 1939, provides 33,000 square feet of floor space and is large enough to permit consolidation of Skuttle management and manufacturing activities. Purchase of the new plant was made to step up production and coordinate over all company operations.

Timken Buys Bossert

ALL THE ASSETS and business, subject to the liabilities, of the Bossert Company, Inc., Utica, New York, were acquired by the Timken-Detroit Axle Company in exchange for shares of Timken-Detroit Axle Common Stock, it is announced by Walter F. Rockwell, president.

The Bossert Company has been an important producer of metal stampings for over 36 years. The present management, headed by Gilbert Butler, will continue to operate the business, and no changes in sales policies are contemplated.

Minn-Hon Leases Building In Further Expansion Program

A FURTHER MOVE in the Minneapolis-Honeywell Regulator Company's $4,000,000 expansion program has been disclosed with the announcement of the lease of a new building in Minneapolis. The company has made arrangements to lease the two-story building formerly occupied by the Society for the Blind to house two rapidly expanding divisions. One floor will be devoted to class, lecture and demonstration rooms for the Honeywell sales school, while the other floor will become headquarters for the research department.

The new building will give both the research department and school about 50 per cent more space while, at the same time, freeing areas in the main plant for expansion of production facilities. The building is located only three blocks from the main plant.

Petro Stockholders Vote To Acquire Refineries

STOCKHOLDERS OF Petroleum Heat & Power Co., Stamford, Conn., were asked on December 23 to authorize the issuance of 1,000,000 shares of common stock, 912,464 of which will be exchanged for the entire capital stock of Taylor Refining Co., Taylor, Texas.

K. G. MacCart, president of Petro, pointed out that the company's fueloil distribution has increased to the point where it has become necessary to enlarge and better integrate its sources of oil supply, distribution of which now is centered in eleven East Coast cities and in Chicago. In addition, production facilities at Stamford have been tripled since the end of the war.

Taylor Refining's main office is at Taylor, Texas, and it owns and operates a refinery of 25,000 barrels per day capacity in Corpus Christi. It is engaged also in the production of crude oil and natural gas with leases in Duval and Victoria Counties. Taylor owns a 50% interest in

Ever since 30 years before Broadway turned on its first electric light...

THATCHER FURNACES HAVE BEEN DELIVERING THE GOODS

THE Great White Way was a gas-lit street till 1880, when the first electric light went on. But hundreds of American homes had long since known the efficiency and comfort delivered by Thatcher Furnaces.

For 30 years before that — and 66 years since — the Thatcher reputation has kept growing. Now we're looking ahead to bigger, more efficient production in our new furnace plant — to finer and finer Furnaces, Boilers and Air Conditioners for your customers' satisfaction.

Today, as always since 1850, we welcome a chance to help you with *your* problems. All our 96 years of heating know-how is at your disposal to help you give your customers more for their money than ever.

KEEP YOUR EYE ON THATCHER

Thatcher **FURNACE COMPANY**

Garwood, New Jersey

SPECIALISTS IN HEATING SINCE 1850

fuel oil & oil heat

Coastal Refineries, Inc., which owns and operates a refinery at Port Isabel, Texas and is engaged in the production and sale of crude oil and natural gas in Starr and Hidalgo Counties. Combined storage of Taylor and Coastal is in excess of 2,200,000 barrels.

In addition to the existing storage in its branch distributing areas, Petro recently completed plans for a large ocean terminal storage plant in New York City, which it will own and operate jointly with others. Construction is scheduled to start before January 1.

Service Plan Announced; Distributor Named

DUO-THERM DIV., Motor Wheel Corp., Lansing, Mich., has been holding meetings to acquaint dealers and distributors with the Controlled Service Plan, designed to reduce installation and service on its space heaters and water heaters to a logical and uniform procedure. The plan, prepared jointly by Duo-Therm's staff of field engineers and service department personnel, reviews the subject of installation and service in a special factory-prepared presentation. It features a pocket manual, presented to each dealer in attendance, which contains service data in condensed form, with numerous illustrations keyed to the text.

C. R. Rogers Co., Pittsburgh, Pa., has been named furnace distributor for Duo-Therm Div. The company, which already handles Duo-Therm space heaters and water heaters, will cover 19 counties in southwestern Pennsylvania and 21 counties in northwestern West Virginia.

Ridgefield Appoints Advertising Agency

RIDGEFIELD CHEMICAL PRODUCTS CO., Ridgefield, N. J., manufacturers of RC soot remover, boiler compound and water conditioner, announces the retention of The Franklin Fader Co., Newark, N. J., as advertising agency. Trade magazines, direct mail and newspapers will be used in its campaign.

White-Rodgers Issues New Control Catalog

A COMPLETE CATALOG, recently issued by White-Rodgers Electric Co., St. Louis 6, Mo., presents the company's line of controls in individual catalogs, all bound together in a binder, which permits removal of old literature and insertion of new or additional issues.

The catalogs contains all necessary control information, including specifications, dimensions, applications, installation instructions, setting and adjustment, and wiring diagrams. Ten index tabs and sheets, included with the binder, identify individual types of controls. The front section gives price information, and the last pages of the catalog explain the company's guarantee and renovation plan.

Eureka Williams Initiates Retirement Income Plan

DETAILS OF A PENSION PLAN, providing retirement income and profit-sharing for salaried employees, inaugurated by Eureka Williams Corp., have been announced by H. W. Burritt, president. Both employees, by voluntary payroll deductions, and the corporation will contribute to the plan. In addition to paying for retirement income based on employees' past and future service, the company also will allocate a percentage of its annual profits for additional retirement income.

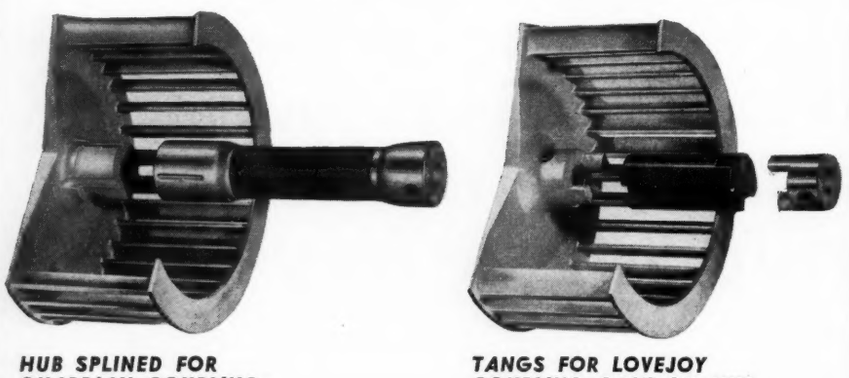
All salaried employees between 30 and

ADVANCE

"CASTALU"

BLOWER WHEELS

Cast in One Piece • Without Rivets



HUB SPLINED FOR GUARDIAN COUPLING

TANGS FOR LOVEJOY COUPLING CAST ON HUB

• Strong and Durable • Light Weight
• Maximum Efficiency
• Quiet Operation • Low Power
• All Standard Sizes
• Natural Finish • Non-Corrosive

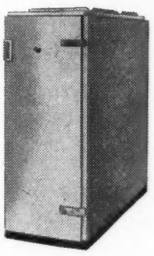
Advance Aluminum Castings Corp.

CAST ALUMINUM PRODUCTS

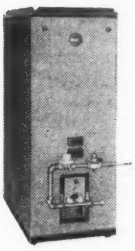
2742 W. 36th Place Chicago 32, Ill.

NOW for MONCRIEF DEALERS!

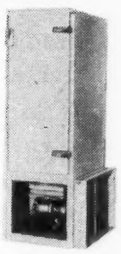
OUT OF A GREAT PAST comes a STILL GREATER FUTURE



Series L
Gas-Fired, Steel
Air Conditioning
Unit



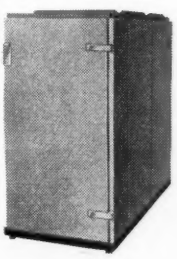
Series W
Gas-Fired, Steel
Gravity Furnace



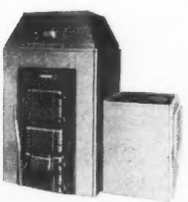
Series U
Gas-Fired, Steel
Utility Air Conditioning Unit

HEATING EQUIPMENT THAT'S *"Years Ahead"* WITH

- ★ *RECOGNIZED VALUE LEADERSHIP*
- ★ *LONG-TERM PUBLIC FAVOR*
- ★ *HIGHEST CALIBRE ENGINEERING*
- ★ *HIGHEST QUALITY MANUFACTURING*



Series P
Oil-Fired, Steel
Air Conditioning Unit



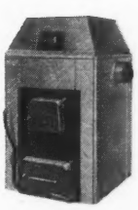
Series AC-700
Coal-Fired, Steel
Air Conditioning Unit

The word "Moncrief" for over half a century has been synonymous with top-notch heating equipment.

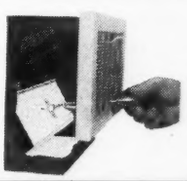
Now, as in the past, Moncrief's top-notch ranking is more than outstanding—outstanding with a line of heating equipment that's "Years Ahead" in design and engineering achievements—with "Eye Appeal—Buy Appeal." That's why Moncrief dealers can again look to a future of greater profits—greater prestige.

Face the future with Moncrief—easier to sell . . . easier to install . . . easier to service. . . .

Series 700
Coal-Fired, Steel
Gravity Furnace



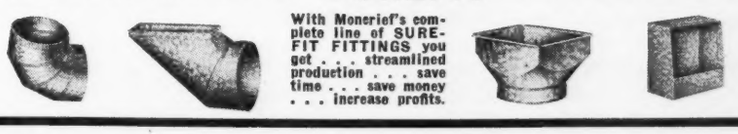
Series C
Coal-Fired, Cast
Gravity Furnace



MAYN AIR STACK HEAD DAMPERS

(1) Install with 3 sheet metal screws.
(2) Locks automatically when proper adjustment is obtained.
(3) Save money 3 ways—cost of damper; cost of installing; cost of balancing, which is a one-man job.

MONCRIEF'S SUREFIT FITTINGS



With Moncrief's complete line of SURE-FIT FITTINGS you get . . . streamlined production . . . save time . . . save money . . . increase profits.

All Moncrief Gas-Fired Units have passed the Latest Requirements of the A.G.A.

THE HENRY-FURNACE COMPANY

Medina, Ohio

HEATING AND AIR CONDITIONING UNITS — MONCRIEF SINCE 1895 — FURNACE PIPE AND FITTINGS

fueloil & oil heat

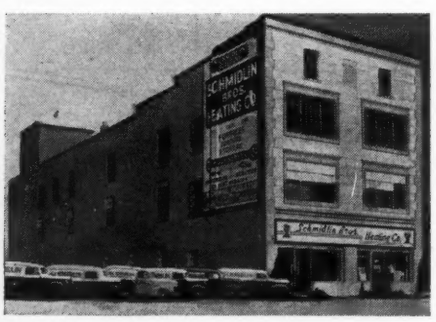
61 years of age, with at least three years service, are eligible to join the plan, and payment of benefits will begin when a participant reaches the age of 65.

The new plan is part of the company's employee security program which includes group life insurance, hospitalization, permanent disability payments and sickness insurance.

Schmidlin Brothers Opens Own Building in Toledo

A NEW BUILDING completely equipped and occupied by Schmidlin Bros. Heating Co., Toledo, Ohio, was opened to the public November 16 with an Open House celebration. The company, established by Carl Schmidlin and Dan Schmidlin in 1917, is one of the most active automatic heating concerns in the area.

The building, formerly the Milburn Wagon Building, has been remodeled.



The first floor houses heating display rooms and offices. There is space for engineering, service and storage facilities of the most modern type.

The Schmidlin company has handled Gar Wood oil and gas equipment, Superfex oil and gas warm air furnaces, Timken domestic oilheating, Petro commercial and industrial burners, and other lines of stokers, coal and gas burning equipment.

Sid Harvey Employees Share $45,000 Bonus

SID HARVEY, president of Sid Harvey, Inc., Valley Stream, L. I., announced at the annual Christmas Dinner Party, that 112 employees who had worked the full calendar year of 1946, would receive one or more shares of the Sid Harvey, Inc. 7% Preferred Stock (par value $100 each share) as a bonus for 1946.

This is in addition to the regular Profit Sharing Plan, which is estimated at $15,000 more. Sid Harvey, Inc. employs a total of 173 at this time, and all but 9 were present at the annual dinner held December 20. Every employee also received a $10 Christmas present and a box of toilet soap.

Ray Sharp, representing the employees, presented Mr. Harvey with a Winchester 30/30 repeating Carbine.

Kresno-Stamm Sales Staff At Canadian Convention

AT A THREE-DAY CONVENTION held on November 23-30 in Montreal, for its distribution, promotion, development and production men, Kresno-Stamm Mfg. Co. (America), Inc., Palisades Park, N. J., and its affiliate, Kresno-Stamm Mfg. Co. (Canada) Ltd., announced plans for 1947 sales expansion. Many wholesale distributors attended. The meeting was under the direction of B. I. J. Stamm, president. Mr. Stamm told of the enlargement which has been completed in both the New Jersey and New York, as well as the Canadian plants, to take care of the large volume of business on hand and expected.

Announcement was made that in 1947 the improved Kres-Kno Ball Flame Vaporizing Oil Burner will be supplied with electric ignition, for small domestic heating applications, and that a new type of cook stove oil burner of more efficient design will be offered. The Kres-Kno Perco-Flash patented Water Heater for hot water heating systems of 550 square feet of radiation and for 25 gallons of domestic hot water storage capacity will also be available.

Kresno *Canadian Meet*

In the field of pressure type oil burners, the new PowRmatic Burner was displayed. This domestic unit contains the Velocitrole, designed by Kresno engineers, which through easy adjustment of the nozzle permits the shape of the flame to be controlled over a wide range of angles to produce desired CO_2 reading. Complete burners have already been sent to many distributors.

Three Lattner Generations Now at Century Engineering

WITH THE RETURN of Bill Lattner recently from three and a half years in the Navy, there now are three generations of the family active in the Century Engineering Corp., Cedar Rapids, Ia. Now, more than ever before, it is doubly important that the visitor answer the receptionist's "Which Mr. Lattner, please."

Bill Lattner, son of E. J., and grandson of J. A., is assistant to the chief engineer, after working summers in the plant while attending the University of Iowa.

J. A., E. J., Wm. Lattner

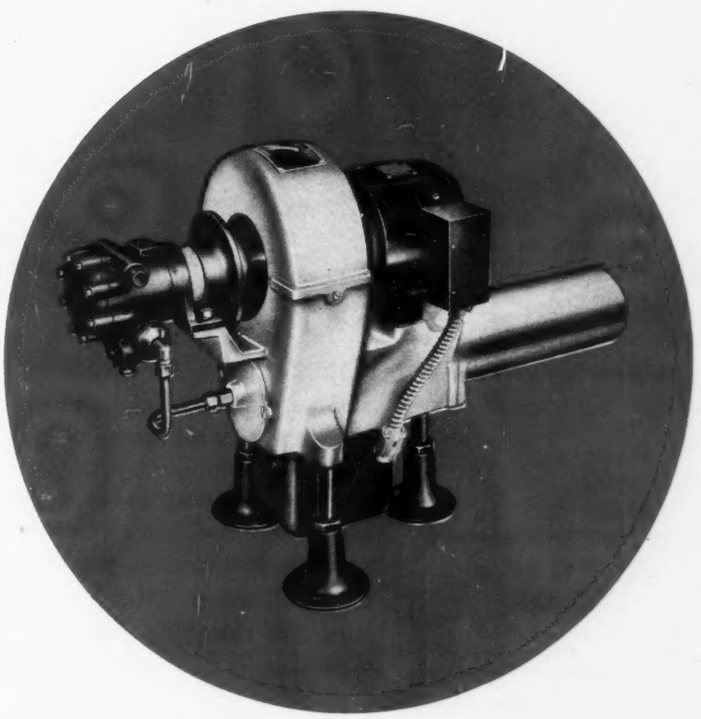
The company was established in 1926 by Joseph A. Lattner and E. J. Lattner, father and son. In twenty years the company has grown to fill its seven-story factory building, and plans call for operations on a scale, "bigger than ever."

Christmas *party for employees of Sid Harvey, Inc.*

IT'S THAT SOMETHING *EXTRA* THAT MAKES THE DIFFERENCE..

WHIRLAWAY, winner of the 1941 Kentucky Derby . . . All Derby winners have been fast, but only Whirlaway finished in less than two minutes, one and one-half seconds!

Today, as always, it takes something *extra* to be outstanding. This is particularly true in the oil burner field, where all burners perform their primary function of producing heat in a similar manner. To be outstanding, to become the leader, a burner must offer something extra! SILENT GLOW'S Air Seel does just that . . . it offers an *extra* at *no extra cost!* A revolutionary adjustable pitch fan prevents cold air from entering the heating plant while the burner is not in operation. This means more efficient home heating at greatly reduced fuel cost. You'll find that this exclusive SILENT GLOW feature is the "extra that makes the difference!"



SILENT GLOW Air Seel . . . All Oil Burners generate heat, but only the new Silent Glow Air Seel saves and conserves it!

The SILENT GLOW

OIL BURNER CORPORATION - HARTFORD, CONN.

fuel oil c oil heat

Davisbilt Affiliated with Liberty Aircraft Corporation

DAVISBILT PRODUCTS CO., Cincinnati, Ohio, affiliated with Liberty Aircraft Corporation, elects new officers and directors for the year 1947. At a special shareholders meeting, December 18, it was voted to amend the Code of Regulations to increase the number of directors from five to six. Officers and directors elected to serve until the next annual meeting were: John F. Winchester, president, New York; E. H. Malden, executive vice-president, Cincinnati; Leonard H. Duerr, vice-president in Charge of Engineering, Cincinnati; J. S. Keller, vice-president in Charge of Purchasing, Cincinnati; Ervin Schwartz, vice-president in Charge of Production, Cincinnati; William T. Snyder, secretary, Cincinnati; and Lydia S. Walsh, assistant secretary, New York.

Green Fire Brick Firm To Help Clay Companies

A NEW FIRM has been organized by the A. P. Green Fire Brick Co., Mexico, Mo., to help and advise refractory and allied clay products manufacturers in meeting the constantly increasing needs for better products and improved management. The new company will be known as the A. P. Green Engineering and Management Company.

This division will issue reports and guides to improve (1) exploration and discovery of raw materials; (2) construction of new plants; (3) the operation of existing plants; (4) compounding mixtures for finished products; (5) selection and purchase of equipment; and (6) overall operation and management. The company has issued a folder entitled, "For tomorrow's Firebrick and allied Clay Product Plants," describing the new company.

Rapid Heat Formed To Make Oil Equipment

RAPID HEAT CORP., Detroit, Mich., has been formed with James H. Hinckley as president and sales manager, Edward P. O'Halloran as treasurer, and Theodore R. Bohn as secretary, to manufacture a complete line of heating equipment. The burner is the equipment originally made by the Jackson Oil Burner Company, a pressure atomizing burner with a vertically placed nozzle.

The company plans to make oil and gas fired warm air units, and boiler units for steam and hot water heating. The firm is in production with its conversion burners and is appointing dealers in protected territories.

Aldrich Expansion Plans

RECENT ANNOUNCEMENTS made by Aldrich Co., Wyoming, Ill., contain information on plans for a large building expansion program and greatly increased production of oilburners and steel boilers. The first of three new buildings contracted for, and to be erected at Wyoming, Ill., will be ready for occupancy by the first of the year. This building will be used for the production of electric motors and transformers, necessary equipment for which, including wire and steel, is already on hand. Glen Hair and R. B. Barber, Sr., will be in charge of motor and transformer production.

Two additional buildings to be constructed will be used to expand boiler production. Completion of the building program will provide for 150,000 sq. ft. of factory area.

Bronze resists rust, scaling and corrosion, provides greater operating efficiency. Newark All-Bronze Controls are increasingly selected by boiler manufacturers for installation as original equipment.

Engineered for positive protection and permanent satisfaction on all automatically-fired heating boilers.

Compact single unit construction combines low water cut off with adjustable pressure control for double protection. Newark Controls' simplified design and sound engineering reduce the troublesome sediment problem.

Approved by Underwriters Laboratories; available in sizes for every type of boiler. Write today for information on Newark Controls' complete line of low water cut offs for boiler installation.

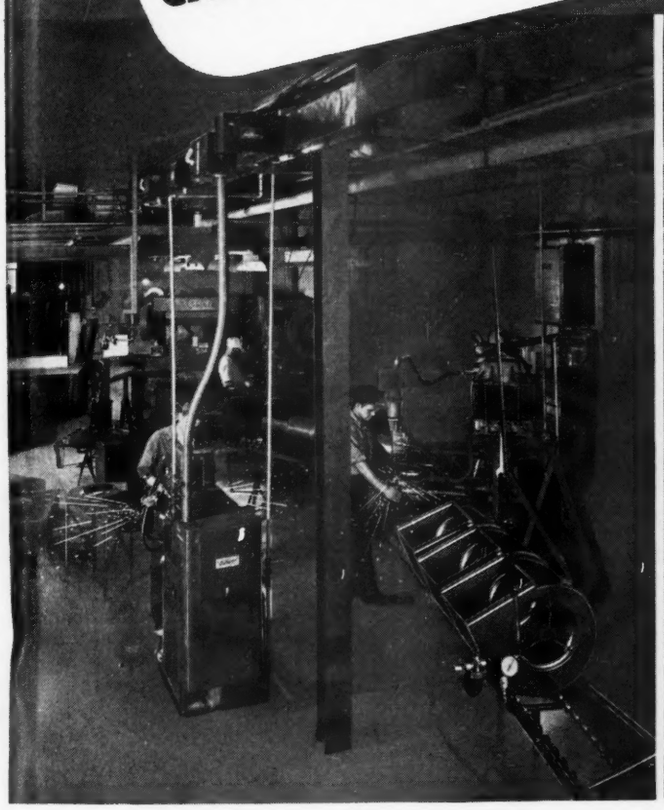
LOW WATER CUT OFF

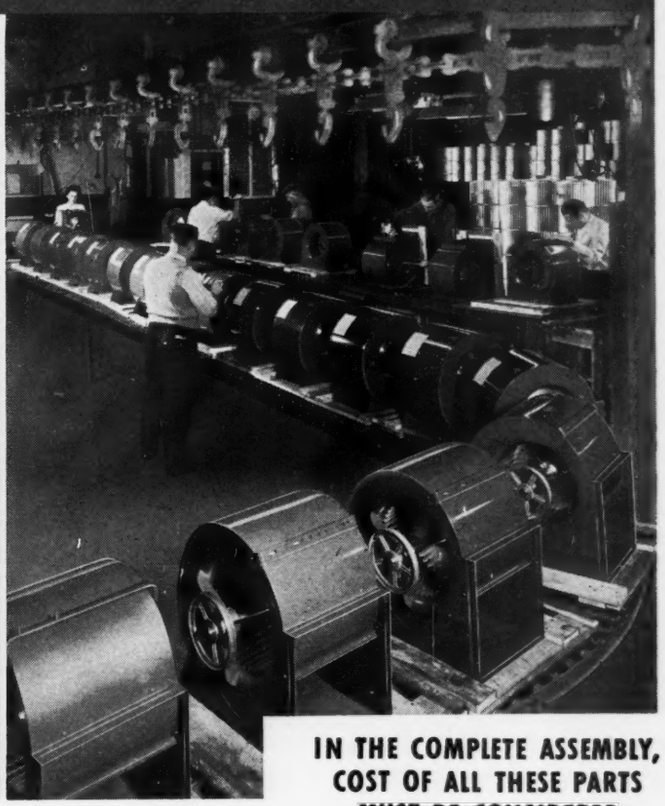
Easy External Installation.
Gauge Glass Mounting Supplied.

- Combination low water cut off - adjustable pressure control by Newark Controls.
- All - bronze; rust-resistant.
- Reduces boiler sediment problem.
- Write for dealer information.

Newark Controls
15 Ward Street
Bloomfield, New Jersey

Lau Blower mass production methods CANNOT BE MET by small-quantity assemblers





There are many positive advantages—the ultimate one being *exact, known costs*—in buying blowers completely assembled, packaged, ready to put on the line. It may seem a simple matter to buy wheels and then build housings for them. But it isn't so simple—your problems are innumerable, and your costs questionable. Besides, the combination may not be exactly right for efficient air delivery performance.

Lau has an investment of thousands of dollars in engineering and equipment to say nothing of years of testing and research in order to produce standardized blowers with precision-matched wheels and housings for best possible performance. Performance is a known quantity. Costs are known. Mass production facilities of this largest manufacturer of furnace blowers make it possible for Lau to offer you unmatched low prices for complete blower assemblies. If you've been thinking about building your own blowers, get all the facts first. Write.

IN THE COMPLETE ASSEMBLY, COST OF ALL THESE PARTS MUST BE CONSIDERED

- Wheel
- Shaft
- Bearings
- Collars
- Washers
- Nuts
- Bolts
- Bearing Support
- Blower Support
- Motor Mounting
- Cutoff
- Housing Sides
- Housing Back
- Blower Pulley
- Motor Pulley
- Belt

And, besides, there are labor, purchasing, warehousing, painting and stocking costs, material spoilage and waste, attendant merchandise losses, inventory costs, plant handling, and the cost of final assembly. If blower is not installed in the furnace before shipment there are additional, expensive packaging costs.

THE LAU BLOWER COMPANY
DAYTON 7, OHIO, U. S. A.

WORLD'S LARGEST MANUFACTURER OF FURNACE BLOWERS

MEMBER NATIONAL WARM AIR HEATING AND AIR CONDITIONING ASSOCIATION INDOOR COMFORT

fueloil & oil heat

"We have every reason to believe that we can easily meet our 1947 production goal of 100,000 oilburners and between 15,000 and 20,000 steel boilers," said L. I. Aldrich, president. Continuing, Mr. Aldrich revealed plans for an all-pressed-steel oilburner, announcing that the heavy tooling necessary for production of a 10 gauge steel boiler, together with heavy punch presses, is already on hand. In addition, the company is readying permanent moulding equipment for production of an aluminum burner to preclude failure to meet production goals. Another burner soon to be announced will have a capacity of ¾ to 6 gph.

Toledo Heater Co. Organized; Offers Automatic Water Heater

ORGANIZATION OF Toledo Heater Co., Toledo, Ohio, to manufacture automatic oilfired water heaters, is announced. W. T. Ramsay is president and general manager; Donald S. Woods, executive vice president and sales manager. The company has completed construction of a new plant and production lines and manufacturing techniques developed through war production experience are being employed. At present, the company is producing a heater of 30 gal. storage capacity, but other sizes are contemplated. Distribution is being made through wholesale outlets.

Mr. Ramsay was vice president of Evans Products Co., Detroit, and specialized during the war period as coordinator of manufacturing, purchasing and engineering. Mr. Woods had been associated for 22 years with American Radiator and Standard Sanitary Corp., for the last 12 years had been sales manager of its Detroit branch. During the war he was Chief of the Plumbing and Heating Branch, Office of Civilian Requirements, and also served as technical advisor for the National Housing Agency. He joined Evans Products Co. shortly before the war's end.

Delavan Sponsors Dealer Meetings

SEVERAL MEETINGS for dealers and servicemen were held by Eugene O. Olson, chief engineer, Delavan Engineering Co., Des Moines 9, Iowa, during a recent three weeks trip to the Pacific coast. The trip was made primarily to instruct representatives in Seattle, Portland and San Francisco, on the Delavan nozzle and its applications. One meeting in Portland, sponsored jointly by representatives there, drew an attendance of seventy.

Debler Offers Schacht Nozzles; Moves Office

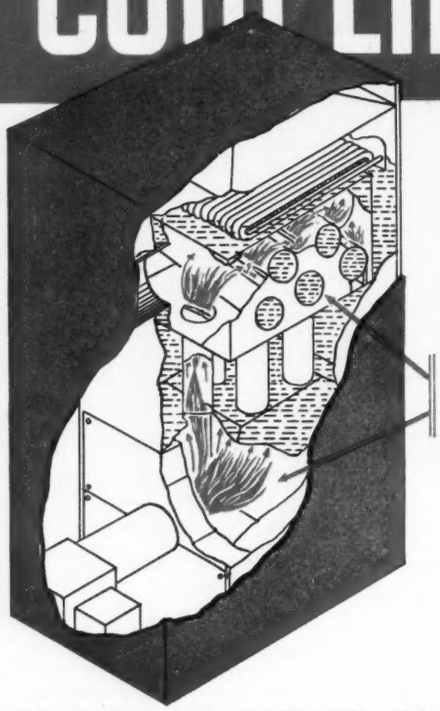
WILLIAM J. DEBLER & SONS now are eastern distributors for the complete line of stainless steel oilburner nozzles made by C. A. Schacht Eng. Co., Huntington, Ind. Added to Clean Sweep soot remover

First *Debler Shipment*

and General fueloil filters, which the company already handles, the nozzles will be distributed throughout the eastern seaboard states down to South Carolina.

The main office of the company has been moved to 790 Broad St., Newark.

COOPERHEAT



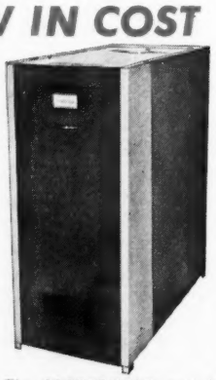
The Gas or Fuel Oil Boiler that Really Steps up Heating Efficiency at Less Cost.

Large Seamless Vertical Fire Tubes and Water Tubes, Embodying a New Scientific Development, Facilitate Swift and Economical Heating.

BUILT OF HEAVY STEEL PLATE—TO INSURE LONGER LIFE

COOPERHEAT IS MODERN HEAT-TOPS IN EFFICIENCY--LOW IN COST

You can sell these scientifically correct Boilers on a definite guarantee of a reduction in fuel bills because of their revolutionary fire tube and water tube design. All models are available with the large, heavy duty COOPERHEAT TANKLESS COIL, which assures ample hot water supply the year round.



The COOPERHEAT unit is housed in a smartly designed extended jacket of heavy gauge steel finished in baked gloss enamel.

FOR FRANCHISE DETAILS WRITE

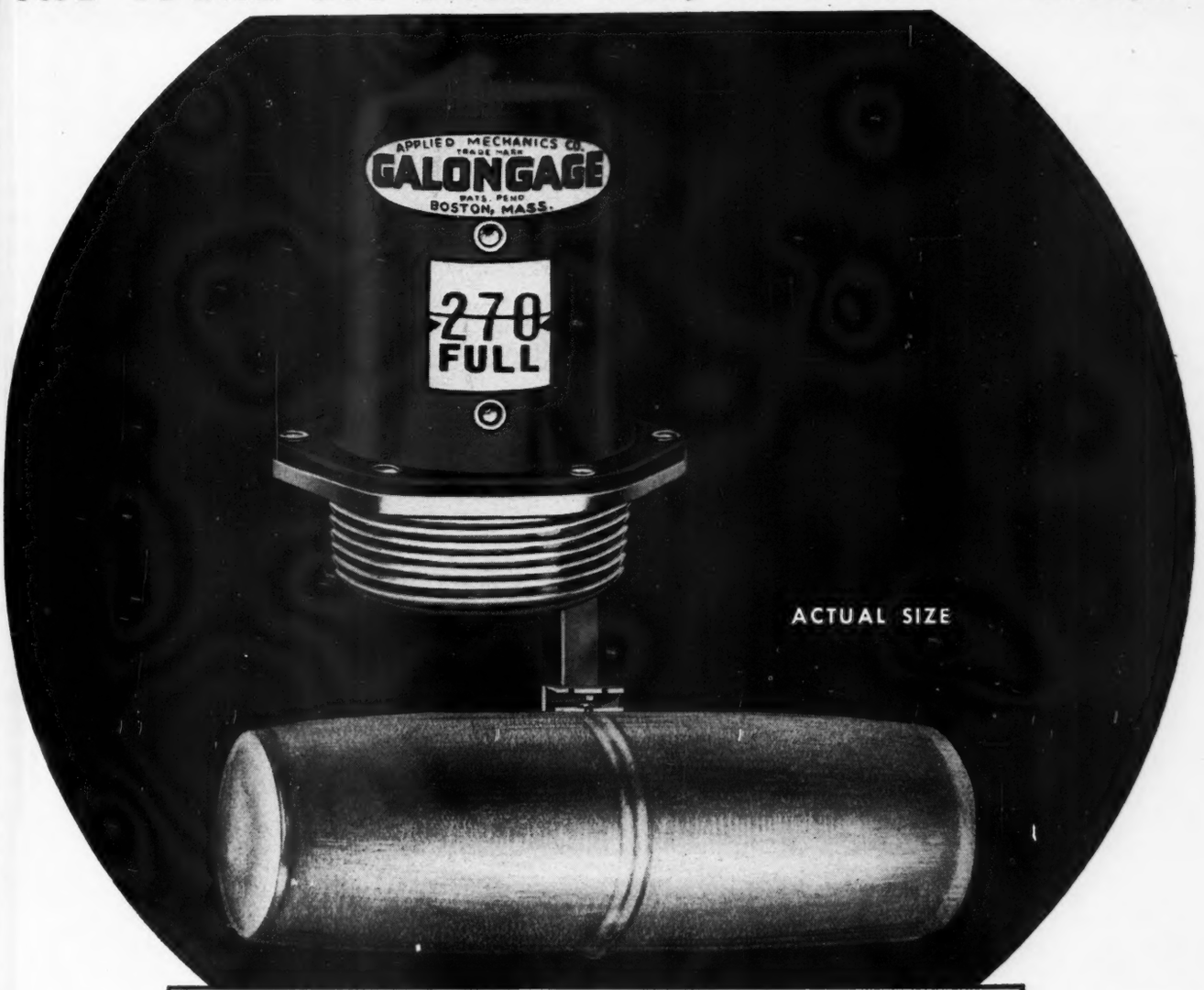
AMERICAN OIL BURNER CORPORATION

Manufacturers of Oil Burners and Steel Boilers

General Office and Factory

Coopersburg, Pa. Phone 29W—600.

THE IDEAL OIL GAUGE FOR BASEMENT TANKS



GALONGAGE FEATURES OF IMPORTANCE TO YOU

- You can have a *Galongage* that measures in 10-gallon spacings — or one that measures in 2-inch spacings.
- Easy to install; 4-inch clearance above the oil tank opening is ample.
- Magnifying lens on the dial makes for easy reading of the numerals.
- Accuracy and eye appeal assure customer confidence and satisfaction.
- Precision built to provide long-lasting, accurate and reliable service.

The *Galongage* that measures in 10-gallon spacings is calibrated for each standard size 275-gallon tank with depths of 44", 42", 27" and 26" with either 1½" or 2" tank openings. The *Galongage* that measures in 2-inch spacings is specially suited to off-size tanks. When ordering, specify depth of tank, size of opening, and calibration desired.

Write today for our price list. Immediate delivery.

THE *Galongage*

A PRODUCT OF APPLIED MECHANICS COMPANY, 167 OLIVER STREET, BOSTON, MASS.

CANADIAN REPRESENTATIVES: *Railway & Engineering Specialties Ltd., 417 St. Peter Street, Montreal*

fueloil & oil heat

Form A. P. Green Engineering and Management Company

ANNOUNCEMENT IS MADE in a folder, issued by A. P. Green Fire Brick Co., Saint Louis 1, Mo., of the formation of the A. P. Green Engineering & Management Co. The purpose and function of the newly formed division is to offer engineering and management service to refractory and applied clay plants. It will give reports and procedures to guide and improve new plant construction and the operation of existing plants.

Continuing Control System of Truck Management

A DETAILED SYSTEM, designed to enable motor truck users to increase transportation efficiency, has been developed by White Motor Co., Cleveland, Ohio, based on a nation-wide study of truck-using industries during the past six years.

The "Continuing Control System of Truck Management" is based on the control of three factors: 1. Correct application of the truck to its work; 2. Improved maintenance; 3. Better selection and training of drivers.

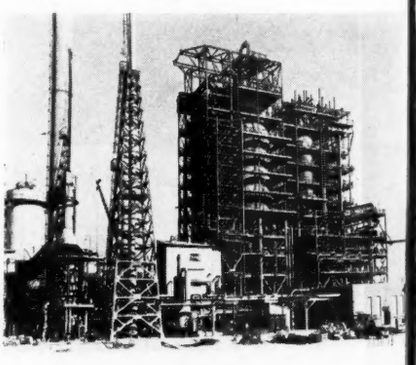
White has prepared complete instruc tions and the material for putting the sys tem into effect, which apply to all make of trucks in all types of services. Lowe cost per mile, longer truck life, reduce accident rate and lower maintenance cos are among advantages claimed for the sys tem.

Tide Water Announces Cost of Living Bonu

EMPLOYEES OF TIDE WATER ASSOCIATE OIL CO., except vessel personnel and cas ual employees, on the company's payro December 2, and who had been hire prior to October 1, 1946, will receive cost of living bonus equal to one week base pay. The payment does not cove any specific period, according to the an nouncement.

Standard of Indiana Starts New Cat Cracke

A NEW FLUID catalytic cracking unit fo the Standard Oil Co. (Indiana) went o stream in October at its Whiting, Indian refinery. With a daily capacity of 1,050, 000 gallons of gasoline, fueloil and othe products, this is the first of four cat-crack



ers planned by Indiana as a part of a $15 million expansion program. All critica points in equipment are fabricated fro or lined with a special corrosion-resistan alloy, since these units are designed t process high sulphur feed stocks.

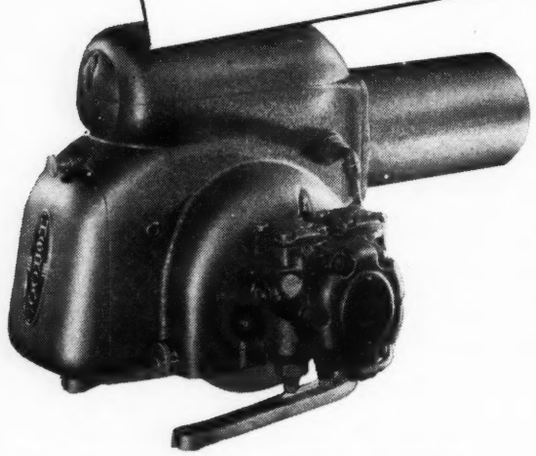
Evans Entertains

EVANS PRODUCTS COMPANY entertaine distributors and dealers at a party in th Bismarck Hotel, Chicago, January 8, t mark the Chicago Winter Market. R. E Evans and Al Shields were hosts for coc tails and a buffet supper.

RESOLVED . . . FOR '47

"It is our aim throughout 1947 to manufacture just as many of the famous oil-thrifty Herco Burners as humanly and materially possible and, as long as the supply is limited, to distribute them on a fair allocation basis."

HERCO OIL BURNER CORPORATION



For Oil Burner dealers, 1946 was tough . . . we could manufacture only 52% of the burners we had planned. We kept asking dealers, as well as their customers, to be patient—to "wait for Herco." Some did . . . some couldn't. To all our dealers we extend our thanks for their splendid cooperation and pledge *our all* to their success in '47.

HERCO OIL BURNER CORPORATION - LANCASTER, PA.

Western States Representative:
Harold Winningham & Company
Main Office:
1117 Second Ave., Seattle 1, Washington

HERCO
The Oil-Thrifty
OIL BURNER

IS OUR FACE RED! Our December advertisement in this magazine said we would be at the 7th International Heating and Ventilating Exposition in *Chicago*—We'll see you in *CLEVELAND.*

The Apthorp —TRUE ALIGNMENT—

OIL BURNER NOZZLE

Dependable Accurate

Leading oil burner manufacturers, distributors and dealers throughout the country say: "This is the finest oil burner nozzle we have ever used."

NOZZLE TIP—made of stainless steel . . . an outstanding example of fine precision workmanship. Special machining process produces smoother than ground finish on inside taper. Mirror finish oil orifice insures uniformly balanced spray and superior atomization.

STEM—made of stainless steel . . . carefully machined with perfectly tapered end matching exactly inside taper of the tip. Oil grooves are highly finished with best precision machinery to assure perfect atomization and delivery of each nozzle at its marked rating.

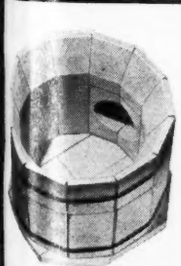
SPRING — made of tempered, heat-resisting stainless steel . . . cannot lose its tension . . . guaranteed not to fail for any reason. (Apthorp spring type nozzles in use for 15 years prove this statement.) Spring permanently maintains position of stem within nozzle tip.

STRAINER—of monel metal or stainless steel . . . large straining area . . . special fine mesh (120 x 108) for nozzles .75 to 1.35 G.P.H. capacity. 100 x 90 mesh for 1.50 to 5.00 G.P.H.

SPRING RETAINER — brass — Makes possible easy putting together or taking apart of entire assembly without any tool, (not even a screw driver needed). Screwing in spring retainer revolves both spring and stem several times, thus automatically seating stem with a perfect "taper to taper" fit inside nozzle tip.

Tip, stem, spring retainer and sturdy indestructible heat-treated stainless steel spring, plus 100 pounds of oil pressure, combine to maintain the perfect "taper to taper fit" throughout operation of the burner. This all important feature is patented and exclusive with the APTHORP "True Alignment" Nozzle.

— All These Products Are Ready For Immediate Delivery —

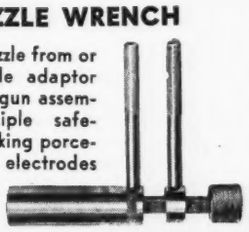


INSTANT-GLO Custom Built COMBUSTION CHAMBER

Made of insulating brick . . . provides a red-hot refractory surface throughout the full operating cycle of the burner, plus many other outstanding features.

IDEAL NOZZLE WRENCH

Easy to remove the nozzle from or install it in the nozzle adaptor without removing the gun assembly. Patented principle safeguarding against breaking porcelain and bending electrodes which commonly happens when ordinary wrenches are used.



Special socket for disassembling nozzle.

CLEARVIEW OIL TANK GAUGE

Will not leak . . . clearly visible at a distance . . . designed for years of accurate service.

WRITE FOR COMPLETE INFORMATION

BOSTON MACHINE WORKS COMPANY

Oil Heating Supplies Division

BOSMACO

7-17 WILLOW ST., LYNN, MASS.

Andre Merle Associates Announces Service

ANDRE MERLE ASSOCIATES, Washington 5, D. C., has been established to specialize in engineering design, detailing, specifications and cost analysis for air conditioning, heating, ventilating, plumbing and commercial refrigerating systems.

Brown Instrument Branch in Tulsa

A NEW BRANCH OFFICE, in charge of R. P. Walker, has been opened in Tulsa, Okla., by the Brown Instrument Div., Minneapolis-Honeywell Regulator Co. The new location includes storage space for instrument accessories, supplies and emergency repair stock.

Tempcon, Inc. Organized

ORGANIZED AS WHOLESALE DISTRIBUTORS of refrigeration and heating equipment, controls, parts and supplies, Tempcon, Inc., Minneapolis, Minn., will serve the oilheating trade in Minnesota and surrounding areas.

John W. Wheeler is president and treasurer; Eugene Coulter, vice president and Walter H. Anderson, secretary. All veterans, they have a background of experience in the oilheating supply business.

Automatic Devices Appoints Outlets

H. T. KUCERA, president of Automatic Devices, Chicago, Ill., announces the appointment of two new representatives to handle Weather-Man controls. The firm of Williams, Gritton and Wilde, Salt Lake City, Utah, will distribute in Utah, parts of Wyoming, Idaho and Nevada; E. M. Clary will cover the states of Georgia, Alabama and Florida.

◈

Max W. Ball, well-known geologist, has been appointed director of the Oil and Gas Division, Department of the Interior, Washington, succeeding Ralph K. Davies, who has been acting director since the inception of the division shortly after the liquidation of PAW. *Ed Swanson* is deputy director.

D. G. Cameron was recently elevated to vice president in charge of manufacturing and *Fred W. Hottenroth* succeeded him as chief engineer, Penn Electric Switch Co., Goshen, Ind. Mr. Cameron's new assignment embraces manufacturing operations at Penn's Goshen, Canadian and Indianapolis plants, where he will coordinate functions of manufacturing, production, engineering and plant engineering. Mr. Hottenroth will be responsible for engineering, design, drafting, laboratory, model shop and specification department.

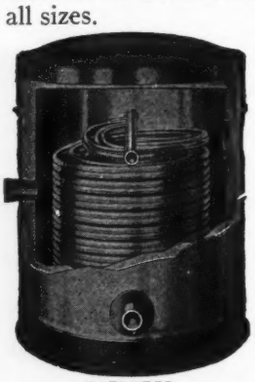
J. D. Conley, who has been a director and assistant secretary of Coroaire Heater Corp., Cleveland 15, since its inception, has become vice president, according to A. W. Conley executive vice president and general manager. J. D. Conley will supervise the engineering and service departments.

Ovel L. Gregory has become manager of bulk sales for the New York Div. Maritime Petroleum Corp., New York, N. Y.

Copper IS ENDURING

...and G & C ALL COPPER WATER HEATERS assure the MOST ENDURING service!

COPPER IS LASTING—IS DEPENDABLE, and when these factors are ENGINEERED and BUILT into G & C line of ALL COPPER WATER HEATERS you are assured years of satisfactory performance. Rigid standards are adhered to in the Manufacuring of G & C ALL COPPER TANKLESS HEATERS, G & C ALL COPPER OIL FIRED WATER HEATERS and the G & C COPPER RANGE BOILERS and COPPER STORAGE TANKS with removable Heating Elements in all sizes.



PATENTED

G & C ALL COPPER TANKLESS HEATER

The ideal tankless unit for summer and winter service where an ample supply of hot water must be constantly maintained. Boiler water shell of heavy gauge copper electric welded. Heavily insulated, minimum radiation loss. Constant upflow of heated water allows circulation line to be used.

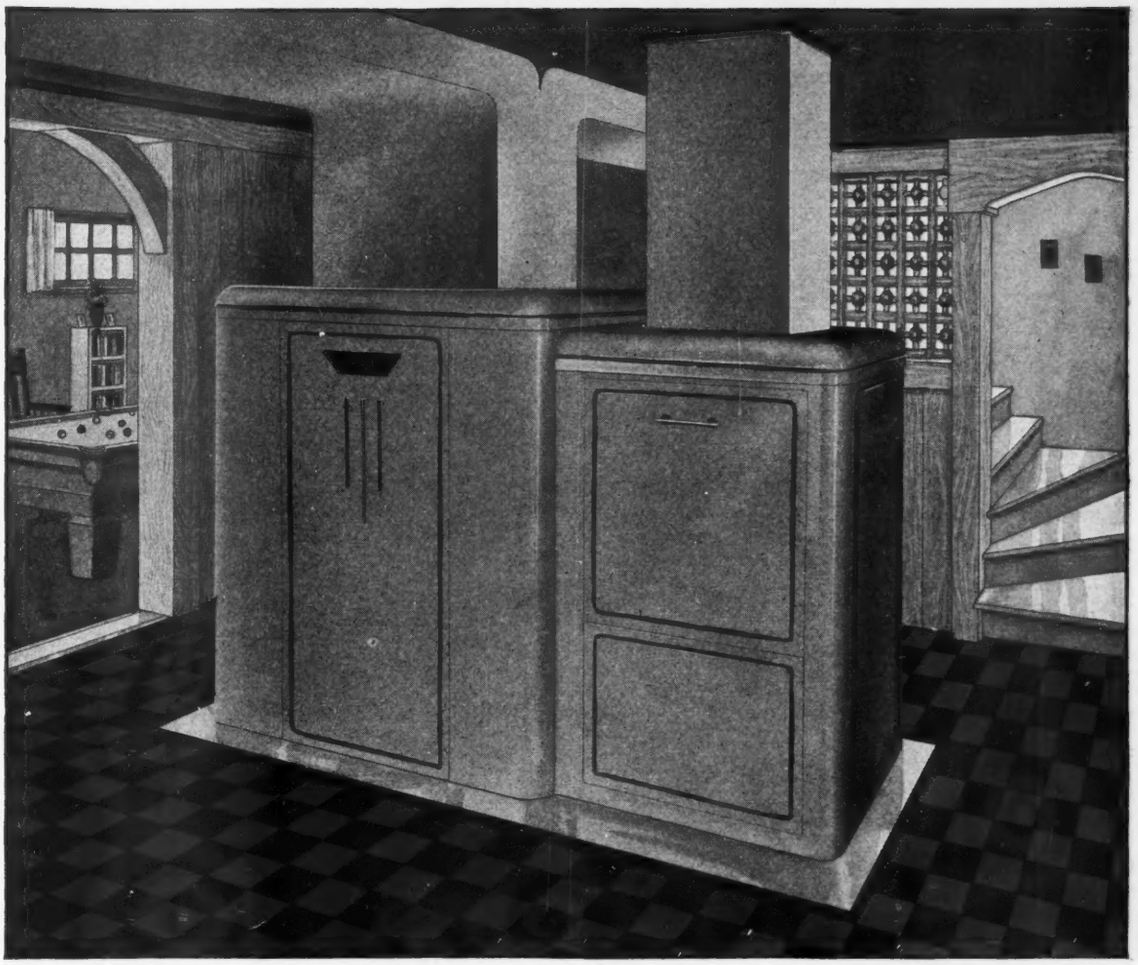
G & C ALL COPPER OIL FIRED WATER HEATER For DOMESTIC HOT WATER, or can be used as a COMPLETE FORCED CIRCULATION HOT WATER HEATING SYSTEM for all *DOMESTIC* and *COMMERCIAL INSTALLATIONS.* FURNISHED LESS BURNER CIRCULATOR AND CONTROLS.

PATENTED

ASK YOUR WHOLESALER FOR THESE FAVORITE G & C PRODUCTS & THE NEW DESCRIPTIVE CATALOG OR WRITE DIRECT TO US

GERSTEIN & COOPER CO.

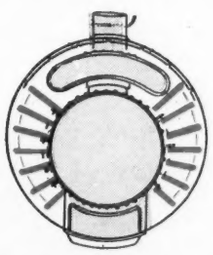
1-3 WEST 3RD STREET, SOUTH BOSTON, MASS.



The VICTOR OIL

WITH THE EXCLUSIVE HEAT RADIATING FINS

VICTOR FINS
More Hot Metal
Heats More Air!



This de luxe winter air conditioner is a fully automatic, oil burning warm air furnace. This leader in the famous VICTOR line is specifically engineered for more efficient oil heating. It has twin economizers, assuring long fire travel . . . PLUS the patented, exclusive Victor HEAT RADIATING FINS. Since 1890 the name VICTOR has stood for tops in quality, appearance, rugged construction, expertness in engineering and—dealer PROFIT. Sell VICTOR in '47.

(Note) Capacities from 50,000 to 500,000 B.T.U. per hour.

Dealers . . . Production is now permitting us to accept a few new accounts. Investigate VICTOR NOW! Your inquiries are invited.

FURNACES — OIL BURNERS — GAS BURNERS — STOKERS — BLOWERS — ACCESSORIES

HALL-NEAL FURNACE CO.

VICTOR *Quality Furnaces Since 1890*

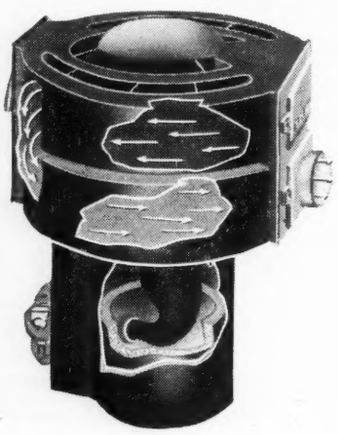
1322 N. CAPITOL AVENUE · INDIANAPOLIS 7, INDIANA

fueloil & oil heat

A. C. Fetzer, vice-president of the Mack Mfg. Corp., has been elected a member of the firm's board of directors at its recent annual meeting. Fetzer, who was acting general sales manager, was at the same time appointed general sales manager, in charge of all marketing activities.

Albert K. Root, manager of the Heating Accessories Dept. of American Radiator & Standard Sanitary Corp., was honored at a testimonial dinner at Pittsburgh's Duquesne Club on the occasion of his retirement after 45 years service.

Dr. John W. Frey is the newly appointed director of the American Petroleum Institute's Division of Marketing. During the war Frey was for a time director of marketing for PAW and later made special assistant to the deputy director.



Greater absorption surface
plus
Low stack loss
equals
GREATER EFFICIENCY

•

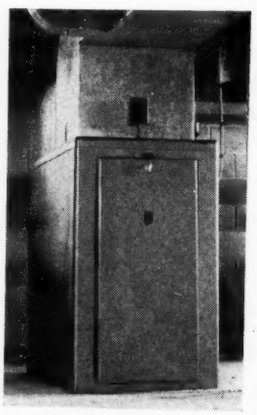
"THE MOST OUTSTANDING OIL FURNACE ON THE MARKET"

•

• SAFE
• CLEAN
• QUIET
• DEPENDABLE

•

COMPLETELY AUTOMATIC



RADIATION FURNACE CORPORATION
BENTON • HARBOR • MICHIGAN

THE BOOK SHELF

New Steiner Book on Fuels and Burners

A NEW TEXT by Kalman Steiner, author of "Oil Burners" and "Oil Burner Service Manual" as well as numerous articles on combustion and heating practices, has been issued under the title, "Fuels and Fuel Burners." The new book covers all fuels, including wood, the principal fuels used by 7.5 million families in the country, and the equipment customarily used to burn them.

A considerable part of the book is devoted to a discussion of coal and coal burning. Three chapters on oilheating, "Fuel Oils," "Oil Burners" and "Oil Burner Installation and Operation," are condensed versions of Mr. Steiner's two other books.

Following two chapters on gas and gas burners, there are chapters on controls, chimneys and drafts and fans, motors and refractories.

It is pointed out that this book is not intended as a technical text on fuels or burners, but is designed primarily for fuel and fuel burner dealers, salesmen, and installation and servicemen. Because of this, the book does not deal with the application of fuels to large industrial uses so much as to domestic and commercial heating applications.

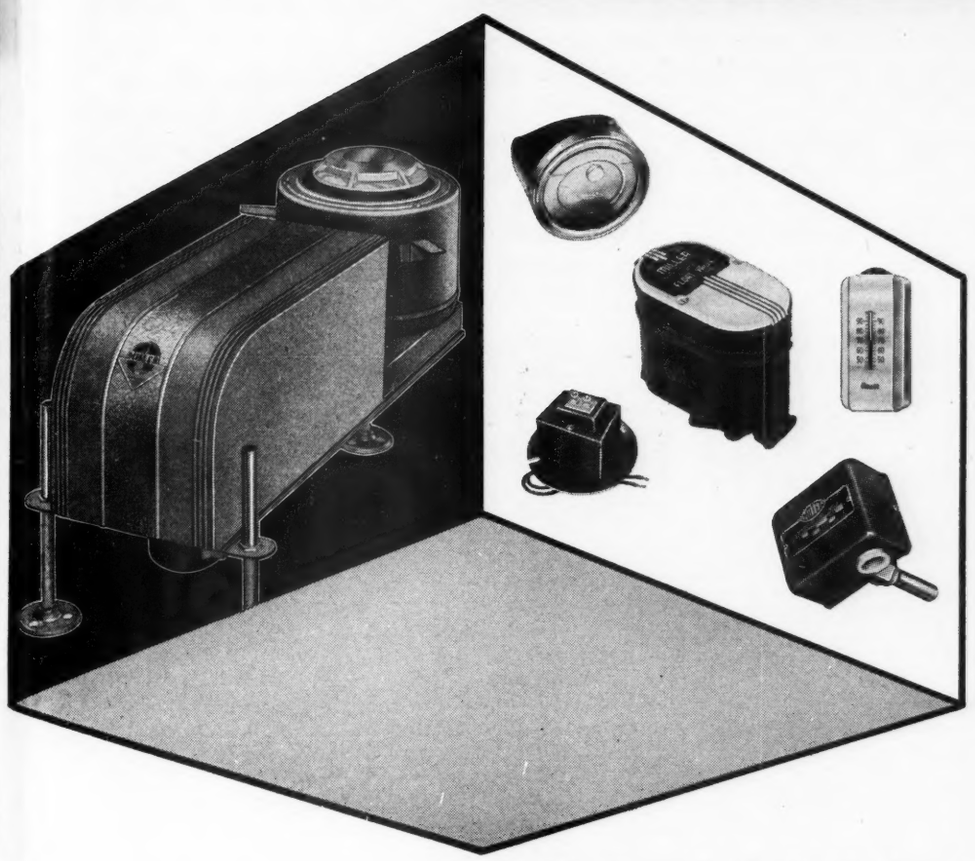
Fuels and Fuel Burners is a cloth-bound book, 5 x 8 inches, and contains a total of 394 pages. It is published by McGraw-Hill Book Company, and is priced at $4.50.

Technical Book Covers Chemistry of Combustion

FUELS, COMBUSTION AND FURNACES, a new book by John Griswold, professor of Chemical Engineering at the University of Texas, presents a thorough treatment of the chemical aspects of fuels and their combustion. It is broad in scope and supplies a needed text in the fuels field.

One chapter is devoted to oilburners, though a considerable part of the text is

MILLER OIL BURNER



ONE SALES PACKAGE
complete with all controls

You can make sales quickly with the MILLER OIL BURNER...you need it to broaden your heating business. It was designed *expressly* for small homes... not a cut-down job. Comes complete in one package, with room thermostat, draft regulator, limit switch, control valve and transformer. Backed by more than 100 years' experience . . . proven by 6 years' actual home use.

low first cost . . . low operating cost

The Miller Oil Burner is the vaporizing type, mechanical draft, for installation in warm air furnaces or steam or hot water boilers. *Low first cost* — yet completely fills the small home desire for clean, healthful, automatic heat. *Low operating cost* — burns a maximum of 9/10ths gallon of oil per hour at high fire, and is Underwriters' approved to burn Nos. 1, 2 or 3 oil. Complete combustion of carbon on each operating cycle.

Valuable franchises available — write or wire today

See the Miller Exhibit at the 7th International Heating and Ventilating Exposition, Cleveland, January 27-31, spaces 910-912-914.

THE MILLER COMPANY

HEATING PRODUCTS DIVISION · MERIDEN, CONNECTICUT

ILLUMINATING DIVISION
Fluorescent, Incandescent, Mercury Lighting Equipment

HEATING PRODUCTS DIVISION
Domestic Oil Burners and Liquid Fuel Devices

ROLLING MILL DIVISION
Phosphor Bronze and Brass in sheets, strips and rolls

concerned with petroleum and natural gas as fuels. The book also introduces the reader to petroleum refining technology and engineering.

Fuels, Combustion and Furnaces contains nearly 500 pages of text, 5½ x 9 inches. It is published by McGraw-Hill Book Co., New York, and sells for $5.50 a copy.

Safety Directory Covers Equipment and Methods

ALFRED M. BEST COMPANY, New York, has issued Best's Safety Directory through the Safety Engineering Division of the company. This is the first annual edition, covering essential information on more than 1,000 products, devices and equipment used in safety, first-aid, hygiene, health conservation and fire protection. The book tells "what product to use," "when to use it," "how to use it," and "where to get it."

The directory (1) lists all safety products; (2) describes the hazard and the remedy; (3) points up the need and field of use of each product, and (4) gives names and addresses of manufacturers, distributors and local dealers. It is cross indexed for easy use.

Best's Safety Directory contains 350 total pages, 8 x 11 inches. It is bound in cloth and sells for $5 per copy.

Panelaire Booklet on Warm Air Panel Heating

PANEL HEATING from a warm air heating plant is described and the method and calculations given in detail in "Panelaire," a booklet published by Edwin A. Scott Publishing Co., New York. The booklet, which is a manual not only on design of the system, but its installation as well, was written by H. F. Randolph, vice-president of International Heater Co., Utica, N. Y.

A section of the book shows step-by-step procedure to be followed in the calculation of the system, and various tables show heat loss factors; Btu requirements for quantities of glass, infiltration and area; conversion factors for design temperatures other than 0 to 70°; ceiling panel temperatures; cfm of air required and pipe sizes. Drawings and photographs show details of construction for the system, suggested layouts, and typical installations.

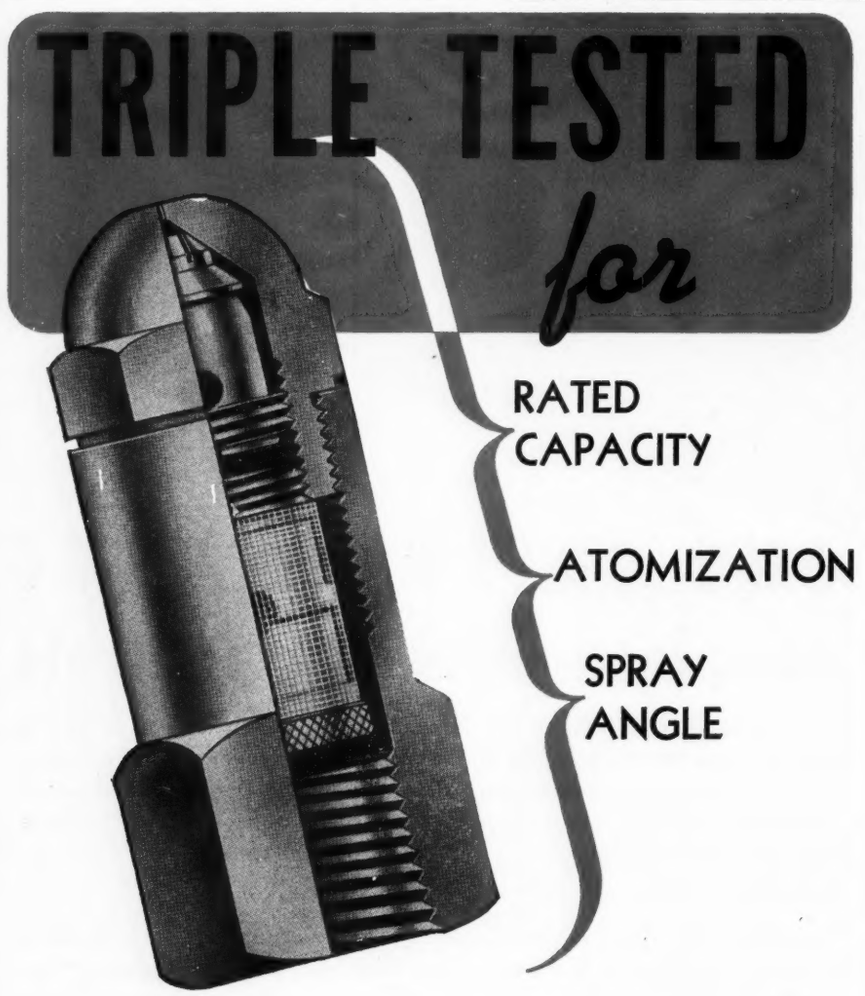
Panelaire is a paper covered booklet of 36 pages 8½ x 11 inches. The price of the book is $1 a copy.

Smoke Prevention Discussed in Book Issued by Perfex

PUBLISHED IN THE INTEREST OF SMOKE ABATEMENT, a 16-page book issued by Perfex Corp., Milwaukee, Wis., covers the subject completely and effectively. Adopting the slogan of the Smoke Prevention Association, "Smoke has no defense . . ." as its keynote, the book endeavors to show the cause and cost of smoke and how it can be prevented and provides information of interest to plant owners and operators, engineers and city officials. The book discusses in detail various types of coal and oilfiring, and concludes with a summary enumerating causes of smoky fires.

Oil-O-Matic Offers Booklets

TWO BOOKLETS, reprints of papers and discussions prepared by W. A. Matheson, vice president, Williams Oil-O-Matic Div., Eureka Williams Corp., Bloomington, Ill., have been issued. (Cont. p. 146)



EDCO

NOZZLES

EDCO OIL BURNER NOZZLES, specified as standard equipment by leading oil burner manufacturers, give first rate performance because each one must pass rigid tests before being released. Large capacity Monel strainers make cleaning seldom necessary.

In ordering, please give complete information about capacity, spray angle, quantity, etc.

EDDINGTON METAL SPECIALTY CO.
P. O. BOX K, EDDINGTON, PENNA.

A BETTER BURNER FOR 1947!

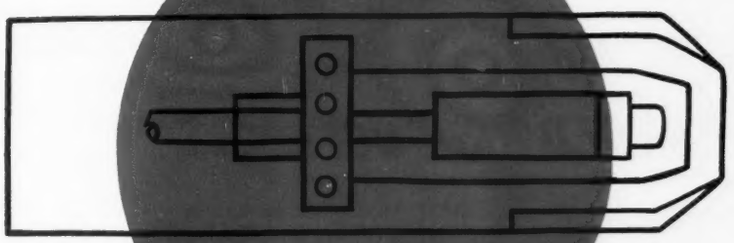
TO BURN TOMORROW'S FUELS

A BURNER YOU CAN SELL ON PERFORMANCE

CO_2 UP TO 14½%; OIL SAVINGS UP TO 20% OVER CONVENTIONAL GUN TYPE BURNERS

REGARDLESS OF TYPE OF BOILER UNIT

The New AUTO-HEAT REG. TRADE MARK



FIRE-BALL

WITH THE PATENTED COMBUSTION HEAD

Will be the leader, because performance speaks for itself. The soot-free, smoke-free ball flame is achieved through the design of the patented combustion head which provides perfect carburation with a minimum of excess air—the ultimate in fuel oil combustion!

Inquiries are welcomed from good distributors and dealers.

WRITE, WIRE OR PHONE

AUTO-HEAT CORP.

311 W. 66th ST. NEW YORK 23, N. Y.

(TRafalgar 7-1920)

"For 20 years—the best in oilheating"

THE AUTO-HEAT FIRE-BALL
IS STANDARD ON THE FAMOUS
Auto-Heat Conversion Burners
UP TO 2 GAL. PER HR.
ON THE
AUTO-HEAT ALL STEEL
BOILER-BURNER UNITS
AND ON THE
AUTO-HEAT Double-Duty
AIR CONDITIONERS

fueloil & oil heat

A twenty-page booklet, "Looking Ahead with Oil Heat," covers the advantages of automatic oil heat with a brief history of oil at war during World Wars I and II and a discussion of oil reserves. It contains, in addition, an outline of the various types of oilburners and a presentation of the case for modern engineering by the oilburner industry.

"Checking the Facts on Fueloil," a reprint of a paper presented to the Group Session on Marketing before the API, is a formal statement on fueloil availability. It offers in concrete, easily-readable form the actual facts on the abundance of oil available. Copies are available from the company on request.

Mercoid Issues Employees Book

A WORKS INFORMATION BOOK has been prepared by Mercoid Corp., Chicago 41, Ill., and a copy distributed to each employee. Purpose of the book, as explained in the foreword, is to acquaint each employee with rules and regulations pertaining to his job with the company. Complete explanations point out employees responsibilities and privileges in regard to working hours, vacations, time cards, union affiliations, wages and general rules governing employment.

◈

Industrial Mineral Wool Institute, New York, N. Y., is distributing without charge a 20-page manual for process engineers and power men, entitled "Control of Industrial Heat and Power Losses." Nine case histories, illustrated and described in detail, cover a variety of typical situations and the calculations show savings made possible by installation of insulation. Descriptions and pictures of the various forms of mineral wool insulation are offered, with definitions, conditions and formulae for determining heat-loss economies on many types of equipment. A heat loss estimate sheet, included with each manual, contains instructions and tables for its use.

Gorton Htg. Corp., Cranford, N. J., has issued Bulletin No. 114 on the Gorton system of vaporizing and equalizing steam heating systems for automatic heating. Available models of air eliminators and equalizing valves are shown, with accompanying descriptions explaining their application to various types of systems.

Scott-Newcomb, Inc., St. Louis, Mo., shows its complete line of heating and cooling equipment and household appliances in a 4-page folder. The first two pages picture and discuss Zer-O-Matic home food lockers, vacuum cleaners, garbage disposal units, sinks and other items comprising complete electric kitchens. Pages 3 and 4 picture unit coolers, attic fans, boiler and furnace-burner units, water and space heaters. Brief descriptions accompanying each unit, with labelled diagrams pointing out features of coal stokers, oilburners, boiler units and winter air conditioners.

Kewanee's Hi-Test series HT portable two-pass tubular boiler, fusion welded for high pressure steam in power service and industrial processing, is discussed in Catalog 89, issued by Kewanee Boiler Corp., Kewanee, Ill. The descriptive data is illustrated with diagrams, and includes full specifications and detailed dimensions.

Ridgefield Chemical Products Co., Ridgefield, N. J., has issued a small folder on its line of Sootout, Sludgeout, oil seal and water conditioner.

WHO'S IN THE BEST SPOT TO MAKE MONEY?

The Man with the BRANDED PRODUCT!

TO THE PUBLIC, a well-established brand name means top quality —at a fair price.

Your customers know no reputable concern can afford to brand a product—advertise it nationally —and back both product and resellers—*unless that product is good!*

It's this fundamental feeling of confidence that gives brand sellers the big advantage. They have the product the public has read about, talked about and is convinced is right for them.

Resellers have this advantage in Mobilheat. The public knows its quality story—has already made it an outstanding name in fuel oil.

★ ★ ★

Mobilheat is One of America's Largest-Selling Fuel Oil Brands!

SOCONY-VACUUM OIL COMPANY, INC.

Plan Now For Profitable Year-Around Selling with the Complete SCOTT-NEWCOMB Line

Are you looking to the future — when you can again sell a complete line of heating, cooling and other related equipment? Look at the list of high quality S-N products that can be real profit makers for you just as quickly as they can be produced in quantity.

The famous S-N oil burners are available and shipments are now being made — with production increases expected in the coming months. Some of the other products listed will be made during 1947 and S-N expects to be in production of all items during 1948. They will be put on the market just as fast as the supply of materials and labor permits.

The first model of the S-N oil burner was produced by L. L. Scott and E. C. Newcomb in 1917. It was the first pressure atomizing burner. Today many of the developments of these two men are in general use — including electric ignition, thermal type safety-pressure oil cut-off valve, non-leaking oil pump driven at motor speed

It is the constant search for new and better designs and better methods of manufacturing that has kept the Scott-Newcomb product far ahead in quality. These are products which you can sell with complete confidence — at a price that will give your customer greater value for his dollar.

Some desirable territories are open, but don't delay, write now giving complete information about your past experience.

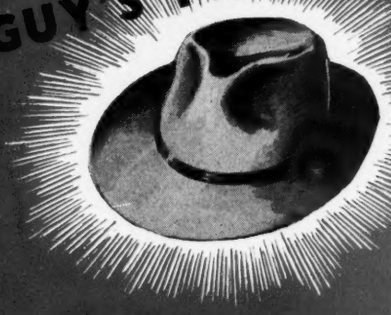
When materials are available again S-N will offer these profit-making items:

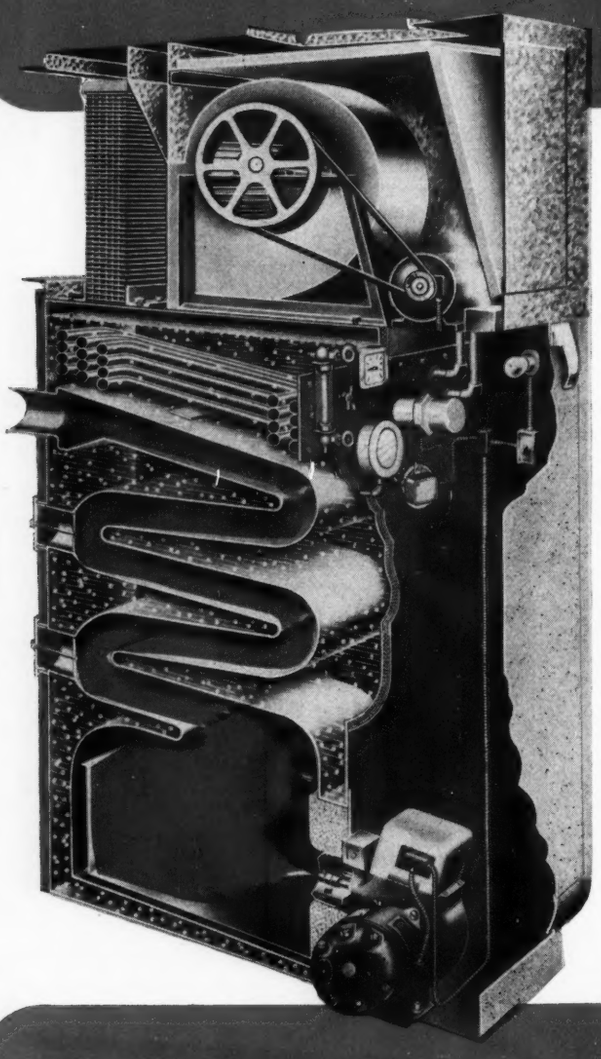
- Oil burners, for No. 3 or No. 5 Oil
- Zeromatic Frozen Food Lockers
- Store Coolers and Room Coolers
- Attic Fans and Blowers
- Stokers—Both Domestic and Commercial
- Furnaces—Oil, Gas and Coal Burning
- Boilers—Steel and Cast Iron
- Oil Water Heaters
- Space Heaters
- Dispos-O-Matic Garbage Disposers
- Water Softeners
- Vacuum Cleaners
- Kitchen Cabinets

SCOTT S N NEWCOMB

SCOTT-NEWCOMB, Inc. 1442 S. BOYLE AVE. ST. LOUIS 10, MISSOURI

SELL THIS "MILLIONAIRE'S PACKAGE" AT THE AVERAGE GUY'S PRICE!





Do you think of split-system heating as a high-priced luxury that's saleable only to a limited, "millionaire's" market? Then—let us introduce you to the Penn Packaged Heat Vaporair!

The Vaporair takes the yacht-owner price tag off the split system and puts it within easy reach of the big-volume automatic heat market. This unique "package" permits the use of both steam and warm air heat in one system—yet sells at a price no higher than that of good "straight" warm air units!

The Vaporair is Penn Packaged Heat. That means it's part of the only line of oil-burning boilers delivered to you with controls, burner and circulator mounted at the factory. Basement engineering is eliminated . . . savings in installation time usually amount to a full day's work or more.

And—here's a big plus. The Vaporair not only supplies split system heat—the same package also provides a year round supply of automatic, instant hot water. This hot water is furnished by the unit itself—there's no need to install additional equipment. A lot of customers for automatic heat are going to turn to Vaporair because it is the first unit to offer them a combination of (1) split system heat; (2) moderate price; (3) automatic hot water. Write today for the new Penn Vaporair specification sheets.

THE PACKAGED HEAT VAPORAIR

Export Office
MELVIN PINE AND CO., INC.
80 Broad Street
New York 4, N. Y.

Canadian Distributor
R. G. DIBBLE COMPANY
Toronto, Canada

Canadian Distributor
ACTRITE EQUIPMENT COMPANY
768 St. Paul St., West, Montreal 3, Canada

PENN BOILER and BURNER MFG. CORP.

LANCASTER, PENNSYLVANIA

Sundstrand's simplified fuel unit service plan is the subject of a folder available from Sundstrand Pump Div., Rockford, Ill. The booklet briefly explains the importance of good service, and through a series of photographs illustrates some of the testing and inspection operations each fuel unit underoges before leaving the

Coleman Co., Inc., Wichita, Kan., features its line of automatic oilfired floor furnaces in catalog No. 4. Illustrations and text stress the advantages and applications and other photographs illustrate component parts of the units. A numbered diagram points out eighteen features claimed for the furnace. Layouts are used to illustrate the application of one furnace for the average small home and application of two and three units in multiple installations. Specifications for two models of floor furnaces, as well as two models of wall furnaces, are given.

Radiation Furnace Corp., Benton Harbor, Mich., pictures and describes its oilfired furnace unit in a 4-page folder. Three cut-a-way views illustrate hot gas travel through the furnace's double radiator and air travel through the filter and blower.

Babcock & Wilcox Co., New York 6, N. Y., has available a comprehensive Firebox Handbook, covering design and construction of fireboxes for domestic oilburners. Many diagrams and descriptive copy deal with the problems and stress the importance of figuring correct combustion chambers for household installation. A series of tables give firebox dimensions for applications at rates from 1 to 5 gph.

Fruehauf Trailer Co., Detroit 32, Mich., features the Featherweight tank-trailer in a 12-page brochure ready for distribution. The unit, available in capacities from 2000 to 6500 gallons, is lightweight and designed to meet requirements of cross-country, short haul and metropolitan deliveries. Sixteen construction and performance features are photographically described.

Republic Boiler Corp., New York 7, N. Y., describes its tubeless residential steel boiler in a 4-page folder. Attractively printed in color, the use of cut-a-way diagrams illustrates features and operating principles. Specifications, dimensions and data for eight oil, gas or stokerfired models and four handfired models are listed.

Small Homes Council, University of Illinois, Urbana, Ill., has issued a small folder on the Home Research Center at the University, outlining plans for a new center being constructed. The folder pictures the center as it will look when completed and enumerates its objectives. A study of radiant baseboard heating in a basementless home is one of the tests to be conducted.

Minneapolis-Honeywell Regulator Co., Minneapolis, Minn., has published the first complete manual on control of radiant panel heating. Much of the materials contained in the book comes from research and test work performed by the company during the past several years. It contains diagrams, charts, photographs and information on the use of graphs for determining required performance. A part of the book has been devoted to the relationship between design and control.

Oil Heat Guide, prepared by Shell Oil Co., Inc., New York, N. Y., is intended to be of value to homeowners, oilburner manufacturers and dealers and fueloil distributors. Commencing with a discussion

ESSO Products
Are Handled Economically with
TRI-ROTOR Pumps

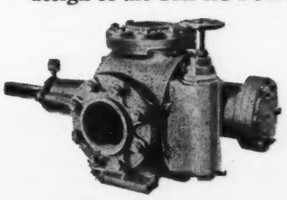
THIS TRUCK and many other similar types of petroleum handling equipment operated by Standard Oil Company of New Jersey are equipped with a TRI-ROTOR Pump by Yale & Towne.

TRI-ROTOR is the only modern low-pressure pump combining the high volumetric efficiency of a rotary pump with the positive handling characteristics of a piston pump.

Esso products . . . and the products of many other famous petroleum companies . . . benefit from the exclusive design of the TRI-ROTOR Pump. Variable volume control also reduces overheating, chewing, foaming or agitating material being handled. Because there are only three moving parts (two pumping members), operating and maintenance costs are at a minimum.

Three head styles: Solid, By-Pass, Variable Volume — optional for all truck pump installations. Sizes 5 G.P.M. to 200 G.P.M.

Send specifications for your pump requirements to the Yale & Towne Manufacturing Company 213 Henry Street, Stamford, Conn.



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ECONOMICAL Rotary Action · PROTECTIVE Piston Action
ONLY YALE *GIVES YOU BOTH* IN ONE PUMP

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MORE and MORE
Paragon Oil Burners
are
NOW AVAILABLE!

CASH-IN ON THE OVERWHELMING POPULARITY OF PARAGON OIL BURNERS WITH HOME OWNERS, HOME BUILDERS AND HOME BUYERS.

GET THE FACTS TODAY

of the fundamentals of fueloil combustion, the book continues in non-technical language to describe fueloil characteristics, suggestions to reduce fueloil bills, how to start an oilburner and how automatic fueloil deliveries work. Charts compute approximate amounts of oil in storage tanks, approximate monthly and daily requirements of fueloil. The Shell combustion head is described in a portion of the book, and its application to gun burners shown.

Blacker Pump Co., Grand Rapids 9, Mich., makes its line of rotary truck pumps the subject of a folder. Three sizes, with capacities of 35, 50 and 90 gpm, are pictured, with accompanying diagrams showing dimensional data. Tables give rated capacities and weights.

Galongage oil tank gauge is discussed in a small folder prepared by Applied Mechanics Co., Boston 10, Mass. The folder features a die-cut outline of the gauge head and explains the application of the gauge to 275-gallon basement tanks. The gauge gives readings in gallons, with red numerals at 50 gallons and below.

Robert Gottschalk has joined Standard Oil Co. (Indiana) as assistant manager of the development and patent department. For the past 12 years he has been a patent counsel in Chicago and previously served with two New York patent law firms.

Carl L. Burrows, manager for the past 7 years of Coleman Co., Inc. of Penna., has been named secretary of the parent company at Wichita, Kan. and manager of the central division. He assumed his new duties November 1, and *L. L. White,* formerly regional sales manager serving New England, succeeds Mr. Burrows as manager of the eastern division. *A. O. Kelly* becomes secretary-treasurer of the Pennsylvania corporation and *Ralph Barnes* takes over the position formerly held by Mr. White. Sheldon Coleman, executive vice president and general manager, who made the announcements, also told of the election of *C. B. Kuhn* as treasurer of the company.

John J. Thurston has been placed in charge of the Eastern and New England Sales Divisions, Wayne Home Equipment Co., Fort Wayne, Ind., until a manager is appointed for New England, ac-

SAFE • ECONOMICAL

KEK

BOILER CLEANER, SCALE REMOVER, STEAM CONDITIONER

KEK cleans scale, rust, oils and organic matter from the heating surfaces of boilers, steam radiators, steam distribution lines, radiators and air vents. KEK prevents formation of rust and scale. Enables boilers to generate full quota of dry steam. Use for low and high pressure—closed and open systems. Non-caustic. Non-corrosive. Guaranteed harmless. Just blow off under pressure. No drain. No flush. No shutdown.

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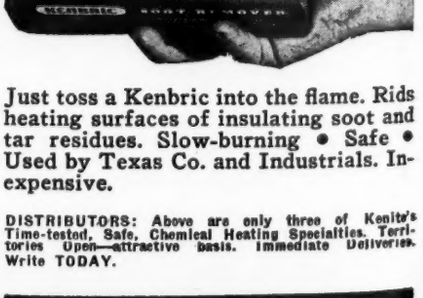
Repair

A safe, odorless, concentrated powder. Permanently seals cracks and pin-holes in cast iron boilers and radiators. Won't affect water. Not affected by subsequent cleaning. Economical. Effective.

KENBRIC
SOOT REMOVER



Just toss a Kenbric into the flame. Rids heating surfaces of insulating soot and tar residues. Slow-burning • Safe • Used by Texas Co. and Industrials. Inexpensive.

DISTRIBUTORS: Above are only three of Kenite's Time-tested, Safe, Chemical Heating Specialties. Territories Open—attractive basis. Immediate Deliveries. Write TODAY.

KENITE LABORATORY, INC.
83 MURRAY ST., NEW YORK 7, N. Y.

TRANSATHERM

SPECIFICATIONS

MODEL A

DIMENSIONS:
Boiler overall: 20" wide, 21" deep, 44¼" high. Jacket overall: 22¼" wide, 41¼" deep, 45½" high.

WEIGHT:
Boiler: 555 lbs. Jacket: 65 lbs.

CONSTRUCTION:
Welded of special high tensile corrosion-resisting steel. Wet base. Unusually large combustion space. Excellent water circulation.

HEATING SURFACE:
29½ square feet water backed.

CAPACITY:
500 net feet steam. 800 net feet hot water. Unusually low stack temperature and high overall efficiency.

DRAFT LOSS:
.03" water at maximum fire. Adequate allowance has been made for possibility of sooting.

STEAMING AREA:
400 square inches.

CLEANING:
All flues accessible thru one opening with easy removable cover.

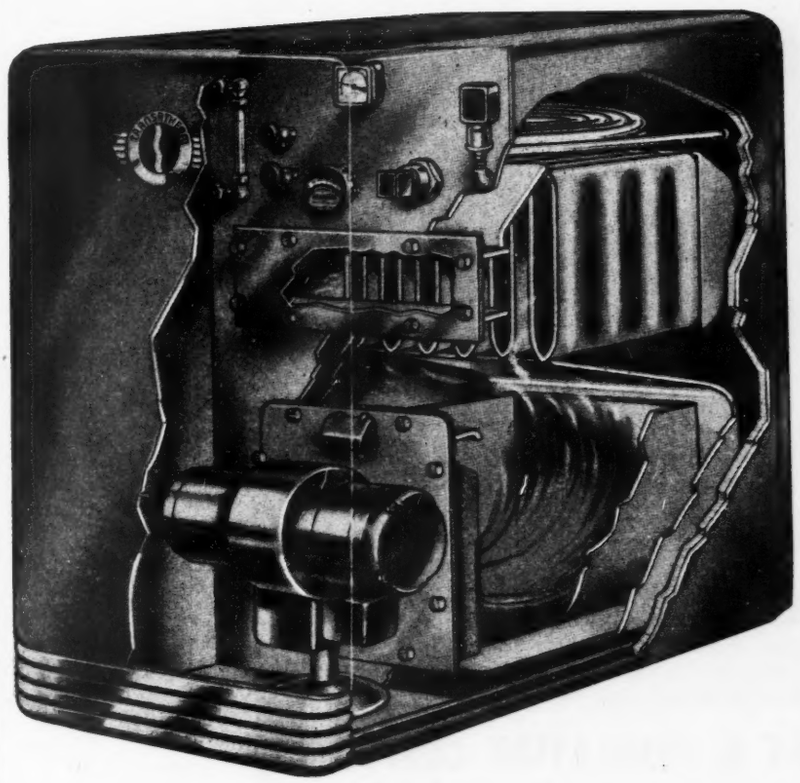
INSPECTION DOOR:
Generous swing type fire inspection door.

WATER CAPACITY:
35 gallons to mean height of glass (36"). 42 gallons full.

WATER CIRCULATOR:
Provision for installation inside or outside of jacket.

DOMESTIC HOT WATER:
Tank and instantaneous coils of various capacities built-in. Fully accessible.

COMBUSTION CHAMBER:
Finest high chrome steel, or refractory brick.



For the first time here is offered for general distribution a boiler so compact and efficient that within the limits of reasonable size and weight it can be completely assembled with burner, controls and jacket and carried as a factory tested unit into the basement.

IMMEDIATE DELIVERY!

Send for literature and more information.

SPECIFICATIONS

MODEL B

DIMENSIONS:
Boiler overall: 20" wide, 17" deep, 39¼" high. Jacket overall: 22¼" wide, 37¼" deep, 40½" high.

WEIGHT:
Boiler: 465 lbs. Jacket: 55 lbs.

CONSTRUCTION:
Welded of special high tensile corrosion-resisting steel. Wet base. Unusually large combustion space. Excellent water circulation.

HEATING SURFACE:
22½ square feet water backed.

CAPACITY:
375 net feet steam. 600 net feet hot water. Unusually low stack temperature and high overall efficiency.

DRAFT LOSS:
.03" water at maximum fire. Adequate allowance has been made for possibility of sooting.

STEAMING AREA:
340 square inches.

CLEANING:
All flues accessible thru one opening with easy removable cover.

INSPECTION DOOR:
Generous swing type fire inspection door.

WATER CAPACITY:
26 gallons to mean height of glass (32"). 30 gallons full.

WATER CIRCULATOR:
Provision for installation inside or outside of jacket.

DOMESTIC HOT WATER:
Tank and instantaneous coils of various capacities built-in. Fully accessible.

COMBUSTION CHAMBER:
Finest high chrome steel, or refractory brick.

Transatherm Sales Corp.

20 So. Broadway (Yonkers 3-4684 " 5-6419) **Yonkers, N. Y.**

cording to B. G. Duer, vice president in charge of sales. For 15 years Mr. Thurston has been a heating specialist with the company, and its predecessor, Wayne Oil Burner Corp. He resides in New York City and will spend his entire time conducting sales meetings and working with Wayne wholesalers under the Partnership Plan introduced recently.

John E. Anderson is manager of the new district sales and service office opened in Indianapolis, Ind., by Wheelco Instruments Co., Chicago. This office will serve the greater portions of Indiana, Western Ohio and Kentucky, and will control a sub-office in Cincinnati, Ohio, with *L. A. Wallingford* as district manager. *Walter A. Jones,* service engineer, will assist Mr. Anderson in Indianapolis.

John M. Lambert has assumed the duties of manager of consumer sales, York Corp., York, Penna., J. R. Hertzler, vice president and general sales manager, announces. Mr. Lambert will supervise all air conditioning and refrigeration sales made direct to users by the company's district office organization in the United States. *Fred C. Wood,* manager of air conditioning sales, and *James Scott,* manager of refrigeration sales, will assist him.

Oscar Lasse has succeeded the late Charles O. Strahley as manager of the personnel department, Texas Co. Mr. Lasse has been with the company for 30 years and with Texaco's personnel department since 1929.

Allen J. Johnson, Lansdowne, Pa., formerly with Anthracite Institute, announces he is available as a fuels and combustion consultant. He has had 25 years experience in coal, oil and gas industries, covering fuel and non-fuel uses of anthracite, field surveys, fuel and combustion reports and general engineering consulting work.

Walter E. Blake has joined Bonded Oil Systems, Inc., Boston 16, Mass., as sales manager, handling oilheating and air conditioning and fueloil sales in the metropolitan Boston area. Before the war he was New England wholesales manager for Timken Silent Automatic Div., and joins Bonded Oil after three years service in the Army.

Eugene N. Foss, 2nd, succeeds Fred Herlan as manager of the Northwestern District, B. F. Sturtevant Co. Div., Westinghouse Electric & Mfg. Co. With headquarters in Chicago, Mr. Foss will direct sales in Northern Illinois and Indiana, western Ohio, parts of Michigan, South Dakota and Montana, all of Wisconsin, Iowa, Minnesota, Nebraska and North Dakota.

H. G. Swanson, manager of the Chicago Marketing Div., Shell Oil Co., Inc., has been elected chairman of the Illinois Petroleum Industries Committee of the American Petroleum Institute.

Walter J. Weldon, formerly general manager of Coleman Lamp & Stove Co., Ltd., Toronto, has been named director of export for the entire Coleman organization. He was first president of the Canadian Exporters Assn. *Charles R. Conn,* former sales manager of the Canadian company, succeeds Weldon as general manager.

Dante E. Broggi, vice-president and director of Neptune Meter Co., New York, has been appointed general manager of production, sales and research, having first joined the company in 1920.

Install 'em in a *third* the time!

Simply set up the sections of an R&I Combustion Chamber round, rectangular or pear shaped and fasten them together with the bonding clips without any cement. Then cement around the blast tube and make the floor with Hearth cement.

All these materials come to you in *one* package. There's nothing else to buy.

This saves you hours of hot, dirty work as well as money.

Another thing—new sections can be quickly and easily installed later if needed.

Get R&I Combustion Chambers from your supply house. Write us for Bulletin OB-98.

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116 Wall Street, New York 5, N. Y.
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DISTRIBUTORS—A few choice territories open. Write for particulars.

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SINCE its recent introduction, the new Gillen Oil Burning Floor Furnace has met with wide dealer acclaim and public acceptance. Compactly designed for quick, easy installation and servicing, this outstanding new heating unit for small homes has established a completely new standard for dependable, economical performance.

Complete details available upon request.

J. L. GILLEN CO.

AUTOMATIC OIL BURNING

GILLEN

Dowagiac, Mich.

WATER HEATERS AND FURNACES

fuelfoil & oil heat

Reader's Problems

Q. A 25 horsepower vertical steel fire-tube boiler carries too heavy a load, as when coal-fired with forced draft it can hardly keep up the needed steam pressure. Oil-fired, it may give a red-hot smokepipe.

If a burner were to be installed in this boiler, would its load-carrying ability be improved? Should an on-off automatic burner be installed or a burner which operates continuously with flame size turned up and down automatically and gradually? What should be the gallon-per-hour capacity of the oil burner?

K. B., *Gary, Indiana*

A. The load-carrying ability of the boiler undoubtedly would be increased if a good burner is installed and adjusted well. Under the conditions you describe, considerable advantage would be gained through installing a burner capable of running steadily, when the load is heavy, with the flame size varied automatically to match the load.

You do not give sufficient data to permit figuring closely the gph rate needed to carry the load. The following may help you. At 70% overall efficiency, one gph provides about three boiler horsepower at the boiler, therefore at this efficiency 8.3 gph would cause this boiler to produce rated output. These points must be considered next. First, from what you say the boiler may be carrying a 50 horsepower or even heavier load. Second, with the boiler overloaded greatly the efficiency will be considerably lower than 70% and three horsepower at the boiler will not be produced by each gph fired. As a guess only, you may have to fire the boiler at about 20 gph to carry the present load. The largest firebox which can be built for the boiler may be needed together with a Dutch oven in front of the boiler base, and a burner size large enough for this firebox may be the thing to install. Oversizing the burner is advisable because firebox draft problems may result from firing the boiler hard enough to carry the overload.

Probably the best way to handle this problem is to install an oil-fired boiler large enough to carry the load at good efficiency.

Q. Every time No. 2 fueloil is delivered to one of our jobs which has a 1.25 nozzle, the nozzle plugs several times a month. On this No. 2 oil, the job plugs strainers badly every time it plugs the nozzle. Special strainers and trying different nozzles make no difference. The nozzle is not overheated. It runs very cool.

We have quite a few jobs which give this trouble. During the war, we swung them over to No. 1 oil or kerosene, for otherwise we could not maintain heat in the homes. The last time we tried switching them back to No. 2 oil, last spring, some of the jobs plugged the nozzles within 24-hours after we installed new nozzles, new strainer elements, and special oil line strainers.

What we want to know is how can we tell when it is safe, with this No. 2 oil, to switch 1.25 gph nozzle jobs back to No. 2 oil from the No. 1 oil now being used for them.

A.R.S., *White Plains, N. Y.*

A. With the two grades of fueloils performing precisely as you relate on these installations which are fitted with 1.25 gph nozzles, the only thing we can recom-

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CLEAN SWEEP
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This ALL PURPOSE Soot Remover remarkably cleans ALL kinds of jobs, pressure, rotary, vaporizing. A trial will win your confidence. Make it your No. 1 Choice. Do not confuse Clean Sweep with any other name.
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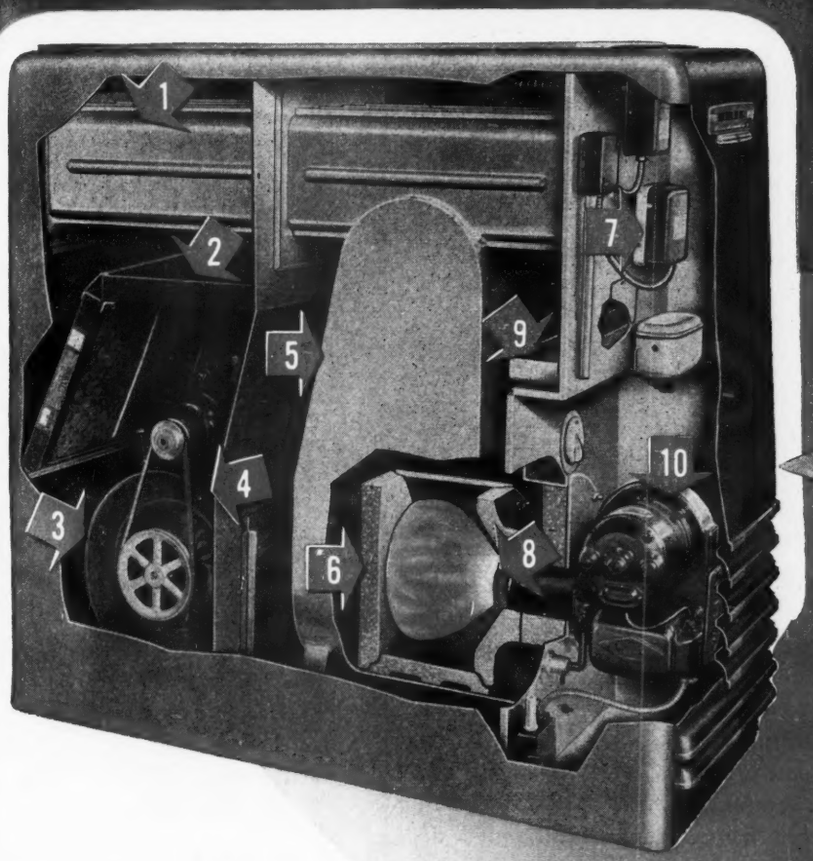

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1. Quadruple, streamlined flue passages, effectively baffled, assure maximum heat transfer efficiency.
2. Large-area, replaceable filters provide clean air with minimum resistance to flow.
3. Oversize, low-speed blower is base mounted to reduce noise and vibration—provides ample capacity for large houses with low heat loss.
4. Quieter, smoother operation is assured by three-point, floating power motor mount.
5. Gas-tight, shielded-arc and seam welded heat exchanger of copper alloy steel assures long life.
6. Pre-cast combustion chamber brings flame to efficient operating temperature instantly—minimizes sooting.
7. Primary control, limit switch and fan control are front mounted for accessibility—all wiring in color coded harness.
8. Flame of symmetrical pattern and stable front maintains high CO_2 efficiency and eliminates pulsation even at low firing rates.
9. Automatic humidifier instantly accessible through low level door in front panel.
10. Bracket-mounted burner has ample space on all sides for inspection or adjustment when unit door is removed.

What you see here is the inside story of a basically new and different kind of furnace-burner unit that brings you every important sales feature you've always wanted . . . *but never had before!*

Here, feature by feature, you see the full evidence of Heil engineering leadership. You see what five years of tireless research and development have accomplished in reducing noise and vibration to a minimum . . . in achieving new peaks of efficiency and operating economy through improvements in every phase of combustion . . . and in vastly reducing installation and service costs by painstaking attention to the accessibility of every design.

YOU CAN'T AFFORD TO HANDLE ANYTHING BUT THE LEADER

Heil's new "Activ-Air" Furnace-Burner Unit brings you in one package thrilling new styling that assures more sales . . . advanced engineering that keeps you ahead of competition . . . and the quality construction for which Heil products have been famous for over a quarter of a century. Here is the unit that means more profits for you because it's designed the way *you* want it!

GET THE FACTS ON A HEIL FRANCHISE BEFORE YOU DECIDE

Your choice of a line decides your profit picture . . . that's why you'll want all the facts about a Heil franchise now. Here's what it means to you . . . a friendlier method of doing business . . . realistic quotas . . . whole-hearted co-operation . . . and intelligent merchandising assistance.

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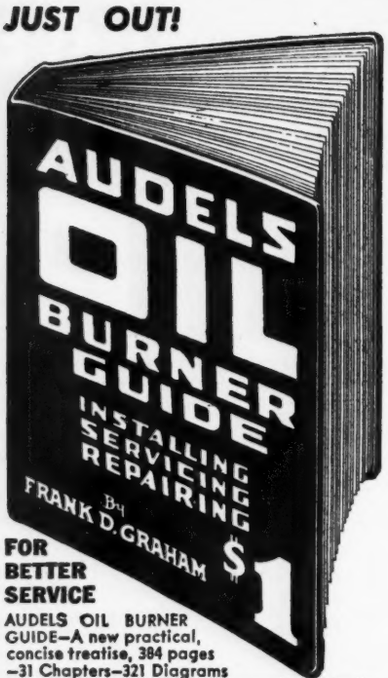

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Name_____

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Occupation_____

Employed by_____ OB7

mand is that you have the burner owners continue to order No. 1 oil until you know that No. 2 oil which does not give the trouble will be delivered when these owners order No. 2 oil. Perhaps from time to time you can have No. 2 oil ordered for one of these installations. After the oil is delivered, draw a sample from the oil tank and observe it. Have laboratory tests made of it. Examine the oil strainers or filters of the installation from time to time to find out if they are plugging as badly and quickly as they did with the troublesome oil you describe. Check to find out if the nozzle slots are plugging. Having thus made certain that the oil delivered to these installations as No. 2 fueloil gives no trouble on your guinea pig installation, you may feel confident about having all similar installations switched from No. 1 to No. 2 oil.

* * *

Q. I am a subscriber to your magazine and have often read of the service problems of other dealers. Now I have a problem which you could help me solve.

On this job, when the thermostat calls for heat, the burner starts, runs for about one minute, then stops, starts again, runs for another minute, then stops again. Sometimes on the third try it will start and continue to run until the thermostat is satisfied.

I have tried two other thermostats but have obtained the same results. Have also checked the stack control panel, but to no avail. On this particular job is also a hot water immersion control for domestic hot water, and when this control calls for heat the burner starts and continues to operate with no interruptions. This indicates the trouble is not in the stack control panel. The trouble seems to occur only when the thermostat starts calling for heat. From this it would seem logical that the trouble lies near the room thermostat. I have tried moving the thermostat to another location, but this obtained no different results.

Have you any suggestions to offer?

A.B.O., *Topsham, Maine.*

A. First, since as you say the temperature control on the boiler starts and stops the burner properly, the control panel on the smokepipe operates properly. Second and also as you say the substituting other thermostats did not end the trouble, therefore the trouble is not caused by a simple defect in the original room thermostat.

INVITATION to PROGRESS

You are cordially invited to examine the modern combustion instruments of the F. W. Dwyer Manufacturing Company, on exhibit.

At the Seventh International Heating and Ventilating Exposition

BOOTH 937

Municipal Auditorium

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January 27th to 31st Inclusive

Dwyer engineers will welcome your questions and problems, and will be pleased to show how precision instruments can improve your heating and ventilating service.

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Combustion Instruments

315 South Western Ave.

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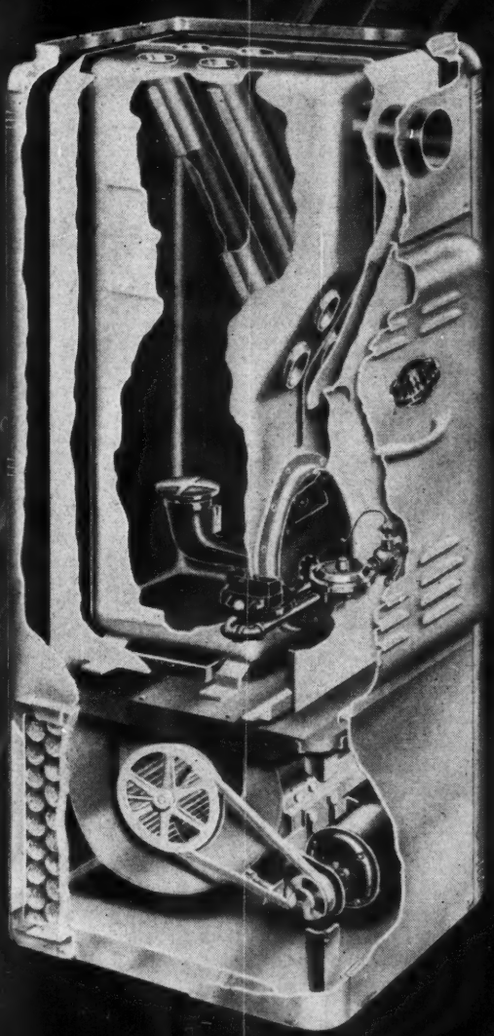
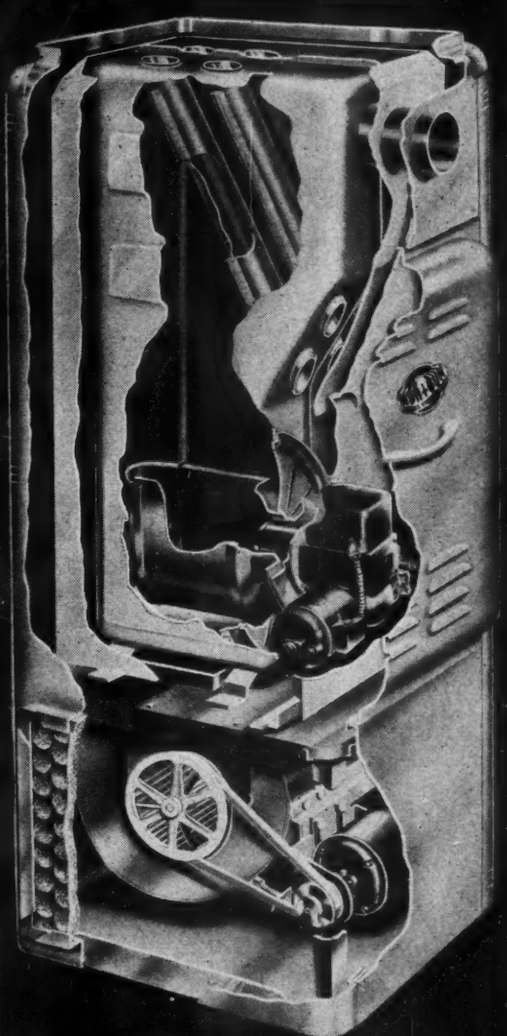
WEATHER PROPHETS*

* Pronounced "Profits" as in a MOR-SUN Dealer Franchise!

The "inside story" of the MOR-SUN pressed steel furnace is the foundation of a mutually profitable manufacturer-dealer relationship, resulting from MOR-SUN engineering. This new line of winter air-conditioning furnaces is easier to install and easier to service! And, stimulated by an intensive national advertising campaign to consumers, builders and architects, MOR-SUN is easier to sell! Remember, there are more profits in MOR-SUN!





MOR-SUN UTILITY MODELS
Above: U-4-O for OIL
Left: U-4-G for GAS

See what's new in warm-air furnaces at our booth at the International Heating & Ventilating Show in Cleveland-Jan. 27-31.

MORRISON STEEL PRODUCTS, Inc., BUFFALO 7, N. Y.

"The Sun Never Sets with MOR-SUN!"

Checking into the following possibilities should help you out of the trouble:

1. If the thermostat is connected to the stack control panel by three wires, make certain that the connections are correct. An error concerning making the connections color-for-color can cause the trouble you describe.

2. Look for a loose connection in the wiring between the thermostat and the stack control panel.

3. Make certain you are not trying to use a thermostat which is not of the snap-acting type with a stack control panel which needs a snap-acting type room thermostat. For example, do not try to use a room thermostat of the Series 10 or Series 20 type with a stack control panel which has a two-wire room thermostat circuit. A snap-acting type room thermostat is needed for a stack control panel which has a two-wire room thermostat circuit.

4. Check on the possibility that the room thermostats you have been trying out on this installation are fitted with heater coils (for rapid action, or shorter "on" periods than are otherwise obtainable) and that these coils do not match the electrical characteristics of the stack control panel. Are you using on this installation a stack control panel different than the model you generally use, and which is not suitable for connection to the room thermostats you generally use? Also, expert dealers sometimes remove or short-circuit the heater elements in room thermostats to avoid short-cycling where they do not desire this.

5. Perhaps the trouble can be ended simply by tuning the room thermostat to operate with a wider differential, if the differential or sensitivity of the thermostat can be changed easily by altering an adjustment.

6. Is there unusual vibration in the entire house which affects the room thermostat? The reason we ask about the entire house is that you have already changed to a different room thermostat location without ending the trouble.

You may do well to follow this course at once in doing your troubleshooting: Remove the room thermostat now on the job from the location upstairs, take it to the basement, and connect it to the stack control panel by the proper wiring. Use the room thermostat to start and stop the burner. Obtain gradual action, to simulate actual operating conditions, by setting the room thermostat only two or three degrees above basement temperature to start the burner. Then breathe gently on the thermostat to stop the burner, and let the thermostat cool by itself, gradually, to re-start the burner. Thus, find the trouble.

* * *

Q. We can obtain no rating data on a water heating boiler which a customer has on hand, so cannot find out if it is large enough to heat the 1,500 gallon hot water tank in an apartment house. The grate is 22" wide and 40" long, approximately. The flue travel of the boiler is poor, as it usually is in boilers of this type which operate under city water pressure. Kindly figure out if the boiler is big enough and tell us how you formed your conclusion.

E.B.W., *Chicago.*

A. According to the grate dimensions you give, the grate area is 3.1 sq. ft. This would call for a firing rate of 1.6 gph for the boiler if you aim for reasonably high efficiency. Certainly the boiler should not be fired harder than 50% over this, or 2.4

*AT-A-GLANCE
OIL GAUGE
EASY TO READ from ANY DIRECTION!!
NON MAGNETIC NO SPRINGS
NO GEARS NO CAMS
PERFECT VISIBILITY
Check the exclusive features of "At-A-Glance" oil gauge and you will see why it is preferred by dealers and consumers alike. Its perfect visibility that permits easy reading from all directions, "At-A-Glance" is just one of its exclusive patented features. Here is a gauge that is a combination that produces a clear reading, leak-proof top, completely protected against destruction or deterioration by shock, heat, flame, or fumes. It is designed and made with a double enclosure of plastic. The calibration assembly prevents oil from seeping into the calibration dome.
No magnets or springs are used, guaranteeing dependability at all times.
No gears, cams or intricate mechanism to cause trouble or wear out. Its construction is as simple as possible for accuracy. "At-A-Glance" gauge is a simple lever action that moves the indicator disc up or down as the contents in the tank are raised or lowered.
Easy to install in all basement tanks, even when partially full. No adjustments are necessary. "At-A-Glance" gauges are constructed at the factory to fit all tank sizes according to individual specifications.
You're not only safe with "At-A-Glance" gauge, but once installed there is nothing to require attention from you or your customer. "At-A-Glance" gauges are distributed by leading jobbers in the United States, Canada and Mexico.
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AT-A-GLANCE GAUGES
ARE LISTED AS STANDARD BY UNDERWRITERS LABORATORIES
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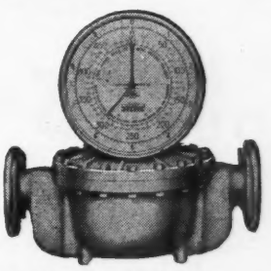
The Print-O-Meter Register provides meter-printed receipts—positive evidence of full measure delivered. Such printed tickets also afford an accurate permanent record for reference and bookkeeping.



This Red Seal Meter, for service on bulk plant loading rack fill pipes, recalibrates each truck compartment at each loading; saves time and stops spillage waste.

Yes, Red Seal Meters provide all of these, because they are precision engineered to give you the best in meter performance and long life.

Utmost simplicity of design pays off not only in low maintenance and easy servicing, but in measuring accuracy. There are no intricate valves to get out of adjustment, no piston rings or leathers to refit; the piston is the *only* moving part in the measuring chamber.

Careful quality control of materials and strict factory supervision play their part to assure long life and trouble-free operation.

And remember, whenever servicing *is* required, Red Seal construction permits quick accessibility to every part. There is nothing here that even faintly resembles the old fashioned alarm clock—which you daren't take apart for fear you could not put it together again. Red Seal disassembly and assembly are simplicity itself!

Write for complete story of all the features that make Red Seal Meters a dividend-producing investment. A wide choice of models and capacities is available, for use on tank trucks or at bulk plants. Full details are yours for the asking.

NEPTUNE RED SEAL METERS

NEPTUNE METER COMPANY
50 West 50th St., New York 20, N.Y.
Branches: Atlanta, Boston, Chicago, Dallas, Denver, Kansas City, Mo., Los Angeles, Louisville, Philadelphia, Portland, Ore., San Francisco, and Long Branch, Ontario.
A-218

gph. Assume you will hard-fire the boiler at 2.4 gph.

It is good practice to figure on heating all the water in the tank in three hours. That means, in this case, heating 500 gallons of water per hour over the standard 100° temperature rise. At 8.3 lbs. per gallon, this means heating 4,150 lbs. of water 100° per hour. The load on the boiler is 415,000 Btu per hour.

Assume the boiler will operate oilfired at 60% efficiency because it has poor flues and you will hard-fire it. Using light oil, 138,000 Btu per gallon, at 60% efficiency gives 82,800 Btu per hour from the boiler for each gallon-per-hour fired. To carry the 415,000 Btu per hour load on this basis would take 5.0 gph. The conclusion is that, even figuring on firing the boiler about 50% harder than will produce good efficiencies from it, the boiler is about half the size needed for the load you describe.

We do know of installations on which boilers of the size you describe are heating tanks which hold about 1,500 gallons of water. The tanks seemingly happen to be well oversize for the hot water loads, which is something you cannot depend on in your instance. Also, the burners operate steadily for four hours at a time when the water heating load is at its maximum, which is unusual and not entirely desirable for this type of installation since it indicates the burners are just barely able to carry the loads properly.

Everyday Snags

Waterlogged Radiator Valves

Waterlogging of the radiator vent-valves of the one-pipe steam heating plant in an apartment house caused the janitor to receive many complaints about the radiators staying cold. He found that he could make a cold radiator hot by removing the vent-valve, shaking a few drops of water from it, and putting the valve back in the radiator.

"Use a higher firing rate in the steam boiler to blow the droplets of water from the radiator vent-valves," recommended one heating expert.

The higher firing rate might have helped, as three hours of steady burner operation did not raise one pound of steam pressure on the boiler. But the janitor felt that increasing the firing rate would probably raise the oil consumption since the stack temperature already was close to 1000°, and he knew that the present firing rate was so high that the burner stayed idle most of the time even on zero days. The size of the firebox did not permit use of a much larger fire, even for trying out the suggested method for ending the waterlogging of the vent-valves.

The next idea offered by the heating man proved more practical. It consisted of using a 1/8" IPT tap to enlarge the radiator vent-valve tapping every time a vent-valve waterlogged. Applying this idea ended the complaints and proved that they were caused simply by the vent-valves needing three or four more turns to screw them into the radiators properly.

Errors Regarding GPH Rates

Important errors can be the result of assuming that every nozzle gives a flame size equal to the gph rate which is stamped on the nozzle. Recently a certain prominent boiler manufacturer received a complaint that a boiler listed for a maximum gph rate of 3.5 was running a stack tem-

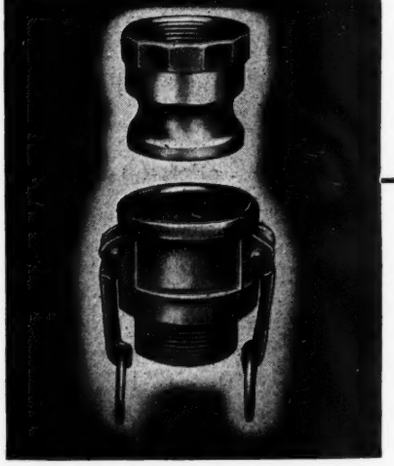
The OIL BURNER with RAY an INTERNATIONAL REPUTATION

OUR 75th YEAR

When, in 1872, W. S. Ray founded the firm which is known today as the Ray Oil Burner Co., he established this principle: "We will build into our products the quality of long-lived dependability, so that the name 'Ray' shall become a symbol of integrity." This principle continues to guide the policies of the Ray Oil Burner Co., today.

RAY OIL BURNER CO.
401 BERNAL AVE · SAN FRANCISCO

EVER-TITE
QUICK COUPLING UNITS



SPEED ● SAFETY ● ECONOMY

Quick, tight connections for all fuel oil and gasoline handling requirements. Positive action — No lugs, springs, ball bearings or snaps.

SIZES ½" TO 8"

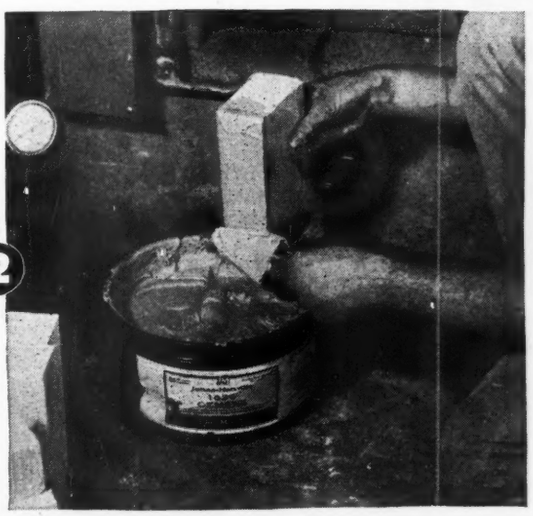
EVER-TITE COUPLING CO. INC.
254 WEST 54th ST. NEW YORK 19, N. Y.
Jobbers Throughout the U.S.A.

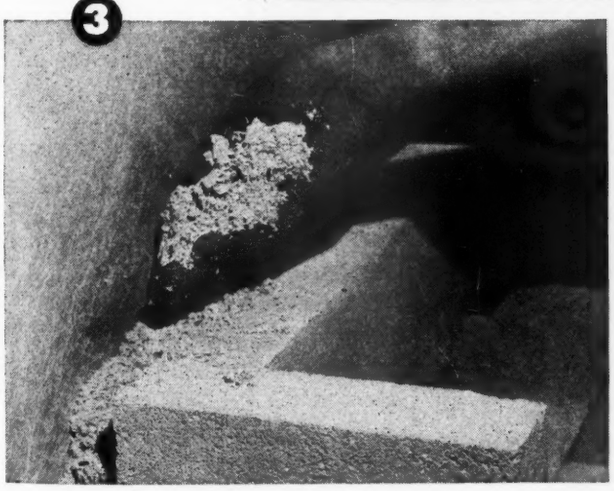
With JM-26 Insulating Fire Brick, You Can

BUILD FIREBOXES FASTER

in the proper sizes and shapes—

—3 easy steps





1 CUT J-M Insulating Fire Brick on the job

All you need is a hacksaw blade to cut J-M Insulating Fire Brick to form any shape chamber . . . round or square . . . oval or pear. They cut easily . . . and because of their light weight, they handle easily. Convenient cartons of 20 brick each can be carried with ease to the job.

2 BOND with J-M 1626 Bonding Cement

Just dip the brick into J-M 1626 Bonding Cement, a specially developed air-setting mortar, and rub into place. 1626 is furnished ready-mixed, ready to use . . . in 10-, 20-, 100- and 200-pound containers. Average requirements are 200 pounds of cement per 1000 J-M Insulating Fire Brick.

3 FILL IN with J-M Asbestos Dobfill

To complete the firebox construction . . . fill in back of brick lining with J-M Dobfill, a lightweight asbestos material that doesn't expand . . . won't corrode the furnace. Dobfill comes in 50-pound bags . . . ready for surface finishing when mixed with water . . . weighs approximately 20 pounds per cubic foot. Write to Johns-Manville, Box 290, New York 16, N. Y. for copy of folder IN-107A.

JOHNS-MANVILLE PRODUCTS

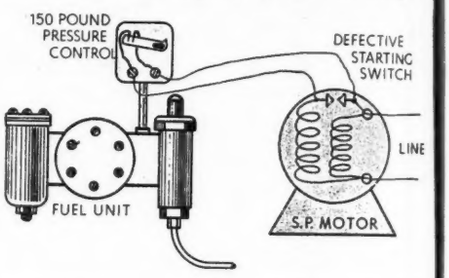
JOHNS-MANVILLE *First in* INSULATIONS

perature of 800°F. Checking on the matter, a field engineer sent out by the boiler manufacturer found that the dealer believed the firing rate was 3.5 gph because 100 lbs. atomizing pressure was being used on a nozzle which was stamped 3.5 gph. The engineer arranged to feed oil to the burner from a small scale, and weighed the oil used by the burner in ten minutes. Actually, it was found, the nozzle marked 3.5 gph was giving a firing rate of more than 5.0 gph.

Although several well-known nozzle manufacturers rightfully take pride in the accuracy and dependability of the nozzle rating and spray angle numbers they stamp on their nozzles, some of the nozzles being used today are not marked as accurately as they should be. In addition, the viscosity of the fueloil and the temperature of the nozzle on a particular installation have effects on the nozzle output. The two factors often increase or decrease nozzle output by as much as ten per cent. A plugged atomizing slot affects nozzle output greatly, of course, and often is found to be the cause of the gph rate being much lower than a dealer or service man believes it is. All-in-all, there is only one way to make certain of the gph rate of a pressure burner: Measure or weigh the amount of oil the burner uses during a given number of minutes.

Emergency Starting Switch

If you have on hand a 110-volt, 10-ampere pressure control which can withstand 150 lbs. pressure and be adjusted to work at about 25 lbs. pressure, explains a certain service expert, you can keep a



pressure burner running even though you need but can't get a new starting switch for a split phase motor. Simply install the pressure control on the fuel unit of the burner as the diagram shows, and wire it to serve in place of the ruined starting switch. The idea is equally good, of course, for a capacitor-start, induction run motor with a ruined starting switch.

Do not use the arrangement any longer than necessary, as the starting winding of the motor probably will be burned out if the pressure control fails to open its switch after the motor starts. Running out of fuel oil or air-binding of the pump can cause this.

Pulsation from Slow Ignition

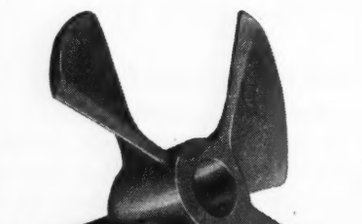
"Bad vibration when the oilburner starts," was on the service slip which was given this trouble-shooter. The man said later that he must have decided on the way to the job that he had a bad case of starting vibration to cure, for after he arrived he concentrated on details which might cause a healthy oilburner to give a pulsating flame when starting. He checked the chimney draft, made sure the flues of the warm air furnace were not plugged, tried tuning the draft regulator on the smokepipe, and fired the pressure burner at a much lower gph rate. Still, every time he started the burner, it gave a puff which shook the whole warm air furnace. It ran well after it started and gave no flame pulsation on stopping.

Four hours of work in other directions

For Higher
COMBUSTION
EFFICIENCY

EDCO

AIR CONES AND
STABILIZERS



Use this new EDCO equipment to get a better fire with greater efficiency. Air Cones and Stabilizers work together to give the proper mixture of air and oil.

Sizes available for Air Tubes, inside diameter: 3½", 3⅞", 4", 4¼", 4½", 4¾" and 6".

EDCO DUPLEX VALVES
EDCO SUCTION LINE STRAINERS

EDDINGTON METAL SPECIALTY CO.
P. O. BOX K, EDDINGTON, PENNA.

KRES-KNO Leads in Top Values

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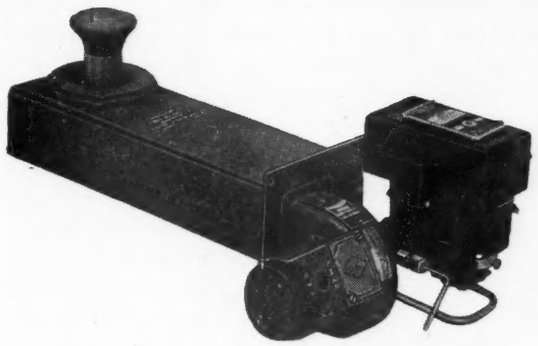


"BALL FLAME" OIL BURNER

"Ball Flame" approved vaporizing type mechanical draft oil burner. Completely packaged, low priced, automatic heat. Simple, inexpensive installation in conversion jobs or new GI or medium priced homes; no refractory fire box to set. Made in two sizes: for warm air furnaces adapted for maximum 85,000 and 200,000 B.t.u. Maximum oil capacity, 3 qts. and 6 qts. per hour.

Dealers: Here's the burner for the GI home!

LOOK AT THE RECORD

In 1936 Kres-Kno introduced the first application of electric ignition to vaporizing type oil burners. With constant engineering improvements, a positive electric ignition has been perfected which will be available in 1947 on Kres-Kno "Ball Flame" Oil Burners.

In 1939 Kres-Kno introduced the packaged "Ball Flame" Vaporizing Type Oil Burner, a compact, simplified unit with patented features for various heating applications in small homes. So successful has this burner been that thousands are in service all over the world today. With added improvements in 1947 models, the "Ball Flame" will again lead the vaporizing burner parade.

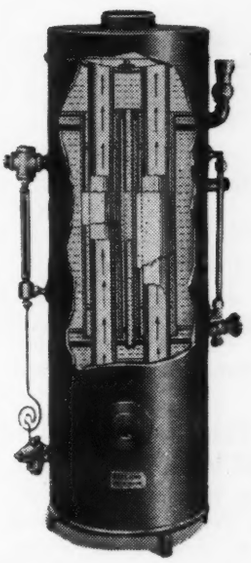
In 1940 Kres-Kno introduced the "Perco-Flash" Patented Hot Water Heater, featuring the fast flash percolating principle and the tube-within-tube system for speedy hot water heating at low cost. During 1946 the entire output was sold out early. In 1947 we expect to double 1946 production.

And now Kres-Kno introduces the "PowRmatic" Pressure Type Oil Burner featuring the exclusive "Velocitrol" fine adjustment of air and oil for perfect combustion and greater fuel economy. This burner is built for heavy duty and trouble-free service. Here's a domestic oil burner that will be "tops" for sales in 1947!

POWRMATIC PRESSURE BURNER

Precision machined, with heavy aluminum body and cast iron base. Equipped with standard approved parts and accessories of nationally known make. Showing "Velocitrol" easy adjustment for more economical operation and high CO_2 rating. Supplied in 1.5 to 2.5 and 3 to 6 gal. per hr. Positions of motor-transformer and pump-blower assemblies are interchangeable.

Visit Booth #940, International Heating and Ventilating Exposition, Cleveland, and see why Kres-Kno Brand Oil Burners and Water Heaters meet the expectations of dealers and distributors as the fast selling profit makers for 1947. Attractive territorial franchises open throughout the world.



PERCO-FLASH

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WATER HEATER

A packaged unit for hot water systems and domestic supply for small homes; includes all safety features for automatic operation. Exclusive patented tube-within-tube percolating design produces fastest hot water recovery at high degree rise. Employs the famous "Ball-Flame" Oil Burner for heating economy.

KRES-KNO Brand

KRESNO-STAMM MANUFACTURING CO., INC.

General Offices: PALISADES PARK, N. J.

Factories at New York, N. Y., Palisades Park, N. J., and Granby, Que.

Canadian Licensees: Kresno-Stamm Mfg. Co. (Canada) Ltd., Montreal, Que.

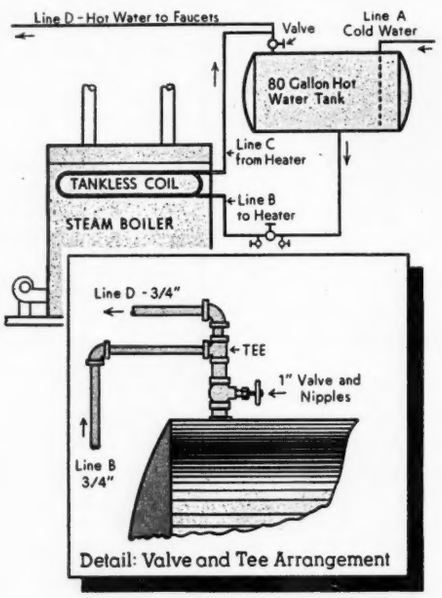
had no effect on the way the burner started, so the service man removed the nozzle assembly from the gun tube, connected the high tension leads to it, and arranged to try out the spark with no oil coming from the nozzle. Starting and stopping the burner motor and watching the spark showed the cause of the trouble clearly. The ignition transformer was weak and gave a spark about one-third the strength of a normal spark, and the result was that on starting the burner sprayed considerable oil into the firebox before lighting the oil.

"Sorry I spent so much time on this job, Boss," the service man wrote on the service slip he turned in at the office. "I pulled a boner. Mistook delayed ignition for the same kind of starting pulsation I found this week on two other jobs."

Tank Piped to Tankless Coil

Questions often arise about connecting tankless water heating coils to hot water storage tanks. Compared to a tank-type indirect water heater, a tankless coil is of great length and of small diameter copper tubing. This tends to render it unsuitable for heating a tank. If it is connected to a tank, at best there will be only a trickle of water flowing through the coil when no hot water is being drawn, therefore the tank can be expected to heat very slowly if it heats at all.

Nonetheless, certain tankless heater coils actually serve more or less satisfactorily when connected to tanks. Knowing this, one oilheating equipment dealer uses the layout shown in the accompanying drawings when, as happens every so often, he decides to connect a tank to a tankless heater.



Detail: Valve and Tee Arrangement

The detail drawing shows the most important piping. The bottom opening of the tee is 1" size, as well as the two nipples, valve, and tank connection below this tee. The idea is to leave the 1" valve wide open if it is found that on the particular installation the tankless coil serves well for heating the tank. As soon as the hook-up is put to work a check-up is made. If the tank heats fully within about four hours, usually this valve can be left wide open. But if the tank heats only slightly, never becoming entirely heated to about 140°, the valve should be left open only one-quarter or half a turn. Most of the advantage of having the tank may be lost, but it still serves as a tempering tank. The tankless coil is fed mildly warm water instead of water entirely cold. If it develops that the valve must be kept tight-closed, it can be concluded that the experiment is a failure and that the particular tankless water heating coil is entirely unsuitable for heating a tank. With the valve closed, the tank will give an appreciable preheat-

GENERAL CONTROLS

OIL HEATING PACKAGE SET

T-23 Package Set

For thermostatic control of furnaces, circulating heaters, conversion burners, etc., where #4 and lighter oils are used.

Dependable and economical T-23 Packaged Controls are easy and quick to install on new and old installations.

Complete Set Includes

Silent A.C. Type K-20-3 Oil Valve with by-pass adjustment for minimum flow regulation or pilot; T-70 Two-wire Metrotherm Thermostat; General T-O Transformer and 30 feet of wire. Everything necessary for immediate installation.

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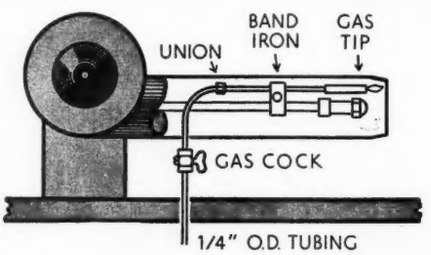
ing effect only if located where the room temperature is uncommonly high. Located over the heating boiler or next to a smoke-pipe where the water in it will be heated to about 90°, for example, an uninsulated tank will assist the tankless heater somewhat even if the valve is tight-closed.

A dealer trying out arrangements of this type should make certain to install the hot water storage tank as high as possible. The bottom of the tank should be well above the tankless water heater. Also, he should be sure to provide valves for easy and complete cleaning of the heater coil. The tank will need the best in a pressure relief valve, of course.

Gun Burner Has Gas Ignition

What can be done on a service call when you find the ignition transformer gives no spark at all and there is no way to obtain a good transformer within a few weeks? As his answer to this dilemma, a certain service man demonstrates his ingenuity by applying a speedily-made gas ignition system, as the diagram shows.

Use a 3/8" copper tube line to bring gas to the burner from any convenient near-by gas connection. At the burner install a gas cock. Run a union-equipped 1/4" OD copper tube line inside the gun tube to an improvised gas tip. The union permits removing the gas ignition assembly with the gun tube and nozzle assembly when the nozzle must be cleaned. For the gas tip, drill a 1/8" or 1/4" brass plug, using a No. 60 drill. Screw this plug inside a coupling or reducing coupling which is mounted on the end of the 1/4" OD copper tube line. Fasten the gas ignition assembly in place, inside the gun tube, through use of band iron or strip steel, or by bolting it to the original electrode supports or other parts fastened to the nozzle line. Leave the electrodes in place or remove them while the gas ignition is used, whichever is more convenient. Knowing that the gas ignition will be used only temporarily until the needed ignition transformer is obtained, you can use a good-sized gas pilot which you know will remain lighted under all conditions of the burner being idle and in operation. The gas flame, like the spark from an electric ignition system, must of course be located close to the oil spray where it will light the oil dependably; but the gas tip must be outside the oil spray and the flame.



Air for the Oil Burner

A few years ago a large gun type burner gave trouble because of insufficient flow of air into the boiler room. For a remedy, the basement window near the boiler was propped open. The temperature of the boiler room and the floor over the boiler room was lowered greatly.

Last winter a wise service man, working on the burner and getting chilled to the bone, started thinking about how much extra oil was being used because the boiler room was cooler than 50° with the window open, whereas it had been above 100° with the window closed. At the back of the boiler room was a large basement storage room, about 50 ft. by 150

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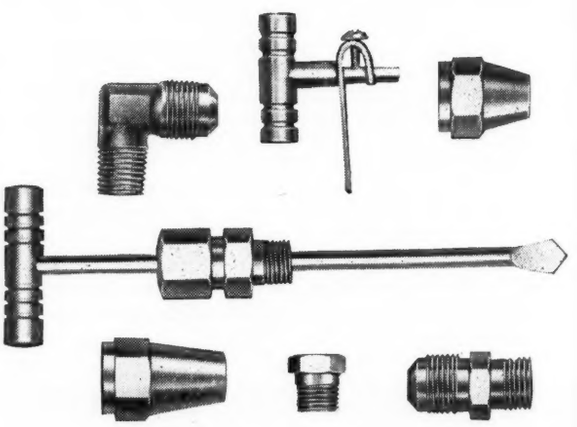
Flared and Compression Fittings.
Pot type cleanout plungers.



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IT'S THE ENGINEERING THAT COUNTS

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FOR HOMES • APARTMENTS • BUSINESS BLOCKS
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fuelail & oil heat

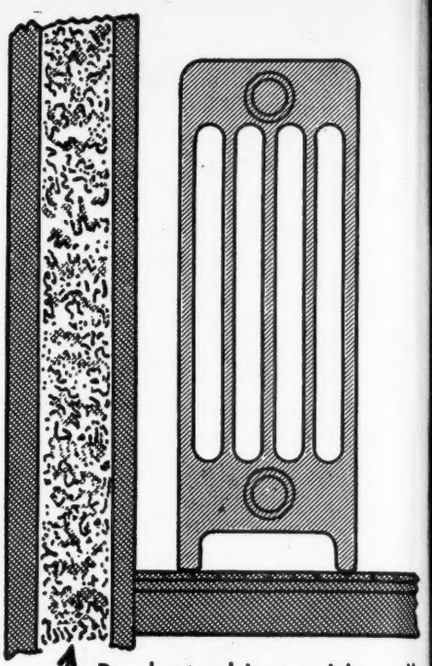
ft., which had more than a dozen windows to outdoors. A solid concrete wall separated this room from the boiler room. An inspection by the service man made him conclude that plenty of outside air entered and ventilated this basement storage room because its windows did not fit tightly. He suggested to the burner owner that a hole one foot square be broken through the concrete wall to give the boiler room air from the storage room, and that then the boiler room window be kept closed. Giving the boiler room air from the storage room would eliminate the chilling by outside air, he pointed out, and oil savings would be the result.

Following the service man's recommendation increased the boiler room temperature to above 100° once again, gave better comfort in the rooms over the boiler room even with the radiators turned off, and according to the owner lowered the yearly oil consumption by 250 to 400 gallons.

Effective Wall Insulation

"EVEN THOUGH you do not insulate fully the outside walls of a house which you want especially to run low oil bills," points out a burner dealer who regularly sells attic insulation along with his conversion burner installations, "You can at least insulate easily in many homes the few square feet of outside wall surface behind the radiators."

This dealer finds that wall insulation behind steam radiators is probably about three times as effective as wall insulation elsewhere in outside walls, since plaster-and-lath and similar wall faces in the rooms conduct heat freely to the air spaces between the two-by-fours of outside walls. Circulation of the warm air in the air spaces of the outside walls increases the flow of heat to outdoors. Appreciation of the effectiveness of back-of-the-radiator insulation is increased by checking these figures. During ordinary winter weather, the temperature of the plaster of an outside wall not near a radiator might be about 60° when the outside temperature is about 35°, giving a temperature difference of 25°, for usual outside walls. But the plaster wall behind a radiator might be at the average temperature of about 90° for all practical purposes, and with the outside temperature still 35° this gives a temperature difference of 65° for outside walls close to and heated by steam radiators. These figures are not accurate for every installation, as for one thing they would be different for different size radiators and different distances between walls and radia-



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Vertical Heating Surfaces
No Tubes to Repair or Replace
Faster, More Efficient Heat
Lightweight, Compact Design
For all types of automatic firing

Manufactured by the Delta Shipbuilding Division of the American Ship Building Company.

ATTENTION JOBBERS! Delta Boilers are distributed through jobbers only. There are some attractive territories still available. For complete information, write or wire

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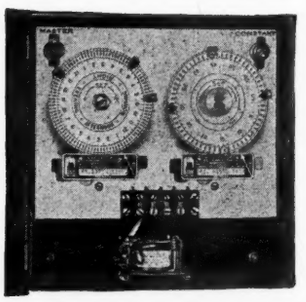

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Thermostats seldom practical in apartment houses; sell "scheduled heat" with TORK TYMOTHERM. Provides continuous early morning operation to maintain "warm-up" period—then changes to intermittent operation to maintain comfort *economically* until night shut-down. For oil, gas, or coal. Fully automatic—all operations fully adjustable.
Model 197N/61R Single pole 115 V, 60 C, 6 Amp $45.00

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EASTERN FACTORY REPRESENTATIVES

January 10, 1947

REPLY: Philadelphia.

AN OPEN LETTER TO MANUFACTURERS OF:

G O O D A U T O M A T I C H E A T D E V I C E S !

IF you are a manufacturer financially sound, capable of BIG PRODUCTION, making a product that will go hand in hand with the three we now sell, shown below, and, desire association with an OUTSTANDING-CAPABLE-SUCCESSFUL-POPULAR Manufacturers Sales Organization contact us promptly.

We have achieved an enviable sales record because:

- G O O D P R O D U C T S
- 24 YEARS OF VARIED OIL HEAT EXPERIENCES
- SOUND FACTORY TO JOBBER POLICY
- SATISFACTION FOR CUSTOMERS FROM OUR MANUFACTURERS
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- LOTS OF HARD WORK

-built up for us, contact and friendship with literally every jobber of oil heating supplies, nearly all jobbers of plumbing and heating supplies, and, manufacturers of oil burners. (Say nothing of wide dealer acquaintance) in the following fertile territory:

-New England States. . .New York. . .New Jersey. . .Pennsylvania. . .Delaware. . .Maryland. . .Dist. of Columbia. . . Virginia. . .West Virginia. . .North and South Carolina.

Any qualified manufacturer with proven, satisfactory product that can be sold as package merchandise to jobbers and burner manufacturers will do well to present their product to us for consideration.

We have opening for one more item which we can do real justice to and, would like to go into the year of 1947 with that opening____ filled. If you have such a product, lets talk it over N O W !

Sincerely Yours,

Wm. J. Debler, Sr

William J. Debler and Sons.

Representing

GENERAL FUEL OIL FILTER • SCHACHT OIL BURNER NOZZLE • CLEAN SWEEP SOOT REMOVER

DEALERS—JOBBERS—MANUFACTURERS, please consider these fine products. Let us send you complete information. . . .

tors, but they do indicate that on a square foot of wall basis the outside walls behind radiators are more important in increasing heat losses than the cooler outside walls elsewhere in the rooms.

The construction of many homes permits easy installation of the rock wool (or similar insulation) behind the radiators, for often it can simply be pushed into place from the basement. The dealer using this idea concludes that using a few bags of insulation in this way may at very low cost cut the oil consumption of certain homes by 4% to 8%, whereas in many homes installing many more bags of insulation in the attic produces only a 15% to 20% fuel savings.

Tune for Brighter Flames

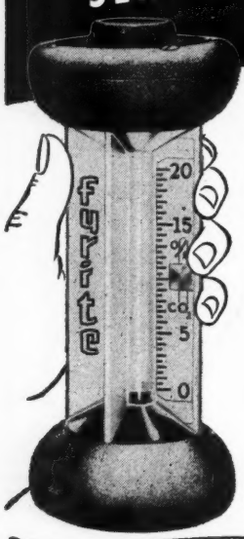
ESPECIALLY IN view of the fact that cat-cracked oils, which are somewhat more difficult to burn clean, are now being used by thousands of burners, it is advisable to adjust now for cleaner burning on many installations which provide summer-winter hot water. Where a burner has been running through the heating season with the flame adjusted to be efficient and on the verge of smoking, increased smoke and soot from the flame often is the result of the burner's taking short "on" periods with the firebox cold, during the summer when it runs only to heat water. A service man can mark positions on the air damper which regulates the air-flow to the fire; one position is known by experience to be the good setting for the heating season, and the other position is used to obtain clean enough combustion for the summer. This saves time in tuning the burner by making it unnecessary to experiment and try this setting and that each time the air damper is best tuned to match the season.

Testing Large Oil Lines

AIR LEAKS in screwed joints of suction lines are bad enough on light-oil jobs, but they can cause so much more trouble on heavy-oil installations that it pays to take special precautions to have the lines air-tight. Therefore an air-pressure test is recommended, particularly for the two-inch suction lines often installed for automatic horizontal rotary cup burners which use No. 6 oil. Here is a test procedure which has been used for years by one engineer, and which is suggested as a standard for all dealers installing burners for No. 6 oil. When the pipefitters have completed the suction and return lines and still are on the job, cap or plug the burner end and the tank stub end of both the suction and return lines. Use the manhole cover on the tank to cap the stubs of the suction and return lines. Where a comparatively small tank has no manhole cover, locate a union in each line close to the tank and use this to remove the stubs from the tank and to re-connect the stubs to the lines after you have placed them sideways in some manner over the top of the tank. It's best, of course, to run the return lines as well as the suction lines to the bottom of the tank, not only for re-circulation of warm returned oil straight back into the suction line, but also to permit using the return line as a suction line if in later years the suction line develops a slight air leak.

Put 100 lbs. air pressure on the lines. Leave a good pressure gauge on each line. Keep the pressure on the lines for 24 hours, then read the gauges. If the air pressure has dropped to less than 90 lbs. in 24 hours, from the original 100 lbs.,

The Standard SERVICE INSTRUMENTS for Heating Men



The FYRITE CO_2 Indicator at the left, with the dial-type Thermometer shown below and our DRAFTRITE Draft Gauge, make a handy, economical combustion testing set that has everything you need for oil burner service and installation tests.

Such tests are not only powerful selling aids for the alert heating man—they are now required by nationally-accepted codes such as FHA Minimum Construction Requirements, OHI Installation Recommendations, Massachusetts Oil Burner Ordinance, and Dept. of Commerce Commercial Standards.

Your jobber can probably show you these instruments. If not, send us his name and ask for Leaflet 701-708 which gives complete particulars.

ALL-METAL THERMOMETER

Outstanding for fast thermal response. Shows stack temperature in 50 seconds. Also very useful for checking register outlet and warm air duct temperatures.

Range: 100°-950° F.

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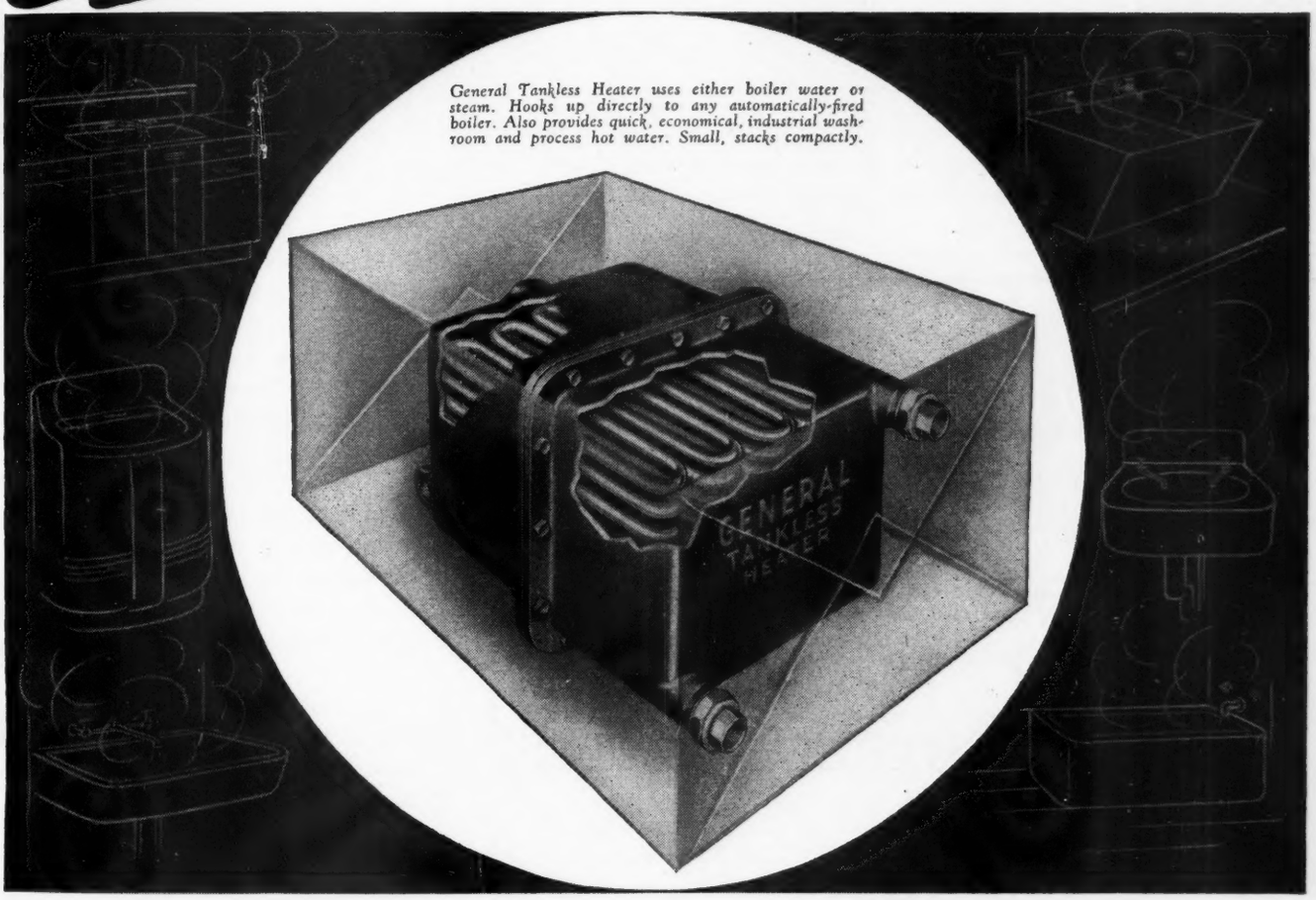
DON'T MISS THE MOST IMPORTANT ADVANCEMENT IN *Oil Heating*

STOP IN AT BOOTH 823

Sell this "HANDY PACKAGE" OF HOT WATER!



General Tankless Heater uses either boiler water or steam. Hooks up directly to any automatically-fired boiler. Also provides quick, economical, industrial washroom and process hot water. Small, stacks compactly.

It's Easier to Install---More Profitable for You!

HERE IS hot water in a "handy package" – easy-to-sell, handy-to-install. General Tankless Water Heaters give your customers up to 35 g.p.m. of continuous, hot-as-you-want-it water at the turn of a tap. No annoying waits while a tank reheats – no space-wasting tank. Water is always clean and rust-free because it flows through copper tubing that won't rust out. And that means lifetime service.

HANDIER FOR YOU

. . . handier, because there is no complicated piping, no bulky tank to install with a General Tankless Water Heater. On large jobs – big houses or apartment houses – a General saves fabricating a tank, excavation for the tank, and installation trouble and cost. Two men can handle the job easily. Tankless Heater can be carried through any doorway – installed after building is constructed. It adds up to more profits and an easier selling job for you when you carry General Tankless Heaters. Send for Catalog 17 describing and giving installation diagrams for Tankless Heaters and other specialties by General Fittings Co., 125 Georgia Ave., Providence 5, R. I.

GENERAL

TANKLESS AND INDIRECT WATER HEATERS AND HEATING SPECIALTIES

the lines do not pass the test and must be made tighter. Locate air leaks by keeping air pressure on the lines and brushing a lather over the pipe joints and fittings, using soap or shaving cream and an old paint brush or shaving brush. After finding and repairing the leaks, test the lines for 24 hours again.

Pipefitters unfamiliar with this air-pressure test are likely to charge it is "whacky" or "unfair" because it shows up leaks in lines that ordinarily might be considered satisfactory. One dealer who installs dozens of heavy oil jobs a year grew tired of endless suction line leak trouble on several of his old installations and started some time ago to apply this test to all his new installations of burners for Nos. 5 and 6 oils. The union pipefitters who installed the lines were not employed regularly by the dealer and started giving him trouble because of the ruthless testing and need to locate and seal half a dozen to a dozen air leaks in almost every suction and return line. The dealer's arguing that refrigerant lines must be still tighter after all, and that air leaks might not worry a pipefitter but did worry a dealer and serviceman when a burner broke down ten times a month because of them, had no effect on the pipefitters. Though they were paid by the hour, they said they objected to going back over finished lines which according to any sane man were tight to begin with. They declared that every leak the whacky air test showed up was a slur on their pipefitting ability.

As the outcome, this dealer now saves effort, time and money by what he calls bribing the pipefitters. Before they start work on the new lines, he tells them of his plan to give them incentive to make up the lines as best they can. When the lines are finished, he places on top of the boiler ten one dollar bills for each pipefitter.

"Those are yours as a present from me," he says, "except that for every leak at the joints which shows up under 100 lbs. pressure, two dollars goes back in my pocket."

Never yet has all the money gone to the pipefitters, though the trick was used on dozens of jobs. Where the men get most the money, the dealer is well pleased because having the lines nearly perfect to begin with saves him the cost of hours and hours of work locating and eliminating great numbers of air leaks. Besides, not one job tested in this way has ever had burner breakdowns caused by suction line air leaks.

Plus Pressure Over-Fire

NEW BOILERS and furnaces designed for oilfiring and lacking air leaks and gas leaks around the flues and combustion spaces often work best in the field when there is no draft over the fires. Operating in this way under "balanced draft" is nothing new in the field of power boilers. It permits certain plants to operate at higher efficiencies than would be attained with negative overfire draft. To carry the idea still further, certain domestic oil-boilers and furnaces operate nicely and at high efficiencies with slight plus pressure, for example, .02" water, over the fires. Low stack temperatures are the result of baffling the flues to such an extent that with ordinary smokepipe draft the over-fire draft is slightly on the plus side. Where ideas of this kind are to be used, it is best to use oilburners with blower wheels well able to work against slight plus pressure in the fireboxes when firing the gph rates needed for the particular installations.

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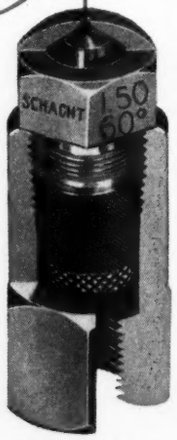
OUR EXCLUSIVE EASTERN SEABOARD FACTORY REPRESENTATIVES FOR —

THE SCHACHT STAINLESS STEEL NOZZLE

with the PATENTED "WHIRL CHAMBER"



The SCHACHT NOZZLE is worthy of your consideration. Not only is it precision made, on newly created ingenious volume producing machinery, in a brand new modern plant, devoted exclusively to nozzle manufacturing, it has the "PATENTED WHIRL CHAMBER."

This CHAMBER, whirls the oil rapidly, breaking it up finer, supplies improved combustion, shorter, cleaner, increased heat producing flames. Added up, means *LESS* fuel consumption.

Too—this WHIRL CHAMBER sets up an agitation behind the orifice that helps to keep it clean, longer. LESS NOZZLE CLOGGING TROUBLES THEREFORE.

We are prepared to make immediate shipment and want DEALERS—JOBBERS and BURNER MANUFACTURERS to become fully acquainted with the SCHACHT NOZZLE-ADAPTERS and usual nozzle accessories—*N O W !*

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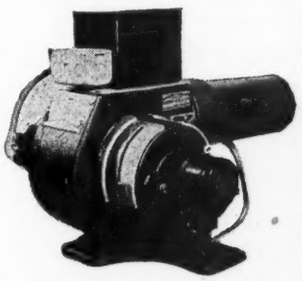
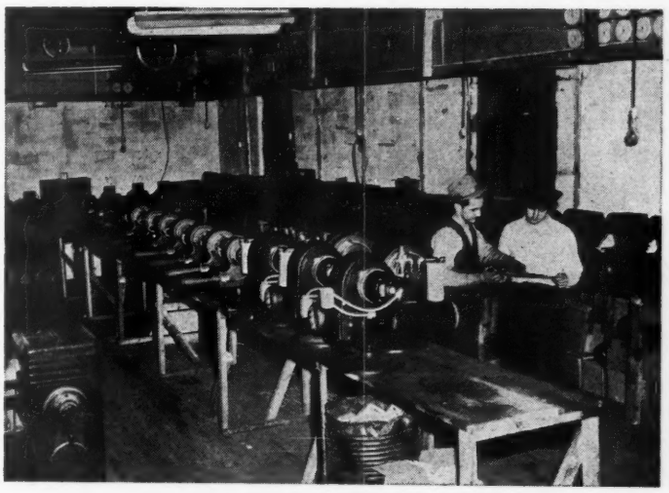
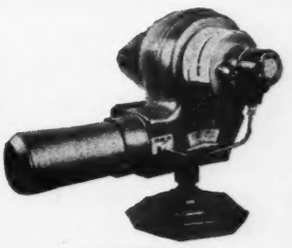
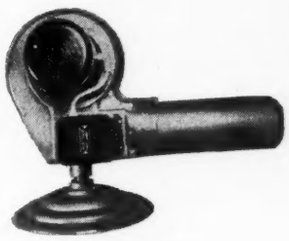


MODEL "M"

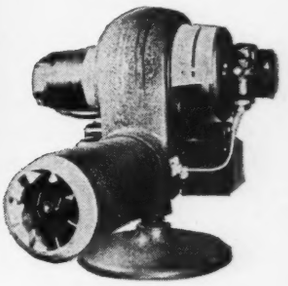




MODEL "B"



MODEL "F"



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Silent-Flame Oil Burners are the product of 29 years of oil heating experience.

Models from 1 gallon-per-hour to 20 gallons-per-hour. Standard Equipment.

Precision Built.

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3 CAPACITIES---800 (1-2 comp.) GAL. 1,000 (1-2-3-4 comp.) GAL. 1,200 (1-2-3-4 comp.) GAL.

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Standardized in design plus excellent workmanship. The *flash-fueler* series may be mounted on any 1½ ton rated chassis.

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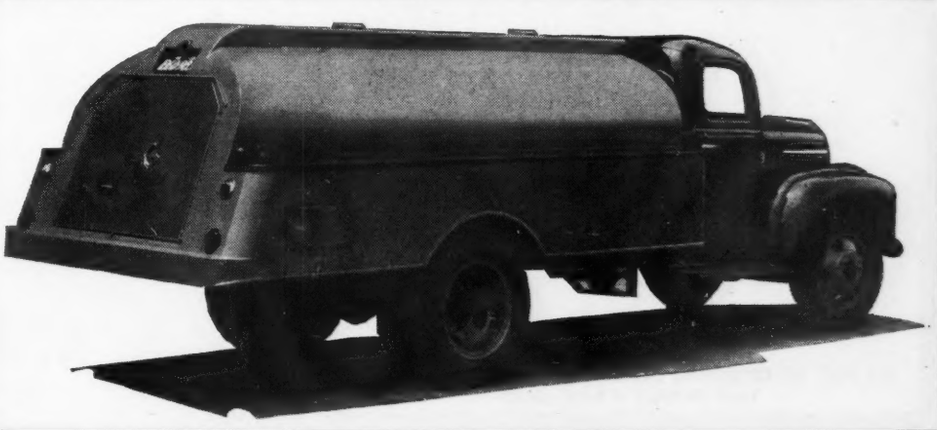

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P. O. Box 1499
NEW HAVEN, CONN.

Fueloil Burning Index

(*Continued from page 92*)

points can be permitted in keeping a 70 Burning Index. The relationship of the Burning Index to the gravity and 50% point of the oil is such that an increase of 1.0° A.P.I. gravity permits an increase of approximately 35°F. in the 50% point while maintaining the same Burning Index.

Consideration of the information assembled in the development of the "Burning Index" and accumulated experience make it rather obvious that existing burners when carefully set at their best conditions will give clean combustion with a wide variety of oils. However, it is also apparent that in the case of oils of low "Burning Index" this leaves little latitude for changes in operating conditions such as might be encountered in a normal heating season. Our observations lead us to believe that the "Burning Index" for fuels used in the average domestic heating unit today should exceed 65. Some critical rotary burners as well as some pot type burners and space heaters may require an oil of even higher "Burning Index."

The "Burning Index" should prove to be a useful tool for refiners and burner manufacturers alike. It provides the refiner with a means of controlling the combustion characteristics of distillate fuels so that consumers are assured oils which will burn satisfactorily in existing burners. On the other hand it presents the burner manufacturer with information concerning the burning qualities of fuels which should be valuable in burner design. Thus it is hoped that the "Burning Index" may serve as an aid to the effective production of more uniform quality oils as well as to their efficient utilization in pace with advances in the technology of petroleum refining and burner manufacture. This, in turn, should be reflected in continued customer satisfaction and in prolonged healthy growth of the domestic oil heating field.

Bibliography

[1] Sullivan, W. A. and Glendenning, E. B.; FUELOIL & OIL HEAT, Vol. 4, No. 1, p. 36 (May 1945).

[2] Cauley, S. P. and Delgass, E. B.; *The Oil and Gas Journal*, Vol. 45, No. 12, p. 166 (July 27, 1946).

Robert F. Whitworth has been appointed division sales coordinator and *George W. Murphy* becomes branch sales coordinator for Gar Wood Industries, Inc., Detroit, Mich. Both have military records during World War II, Mr. Whitworth as a colonel in the Army for Detroit Ordnance District and Mr. Murphy as a major in the Marines.

T. C. Mallon, in a recent appointment, became assistant manager, commercial and truck department, Chevrolet Motor Div., General Motors Corp. He has been with Chevrolet since 1934 and formerly was zone truck manager at Omaha.

Alfred E. Stacey, Jr., one of the seven founders of the company, rejoined Carrier Corp., Syracuse, N. Y., on December 1 as process consultant to the sales division where he will devote attention to the application of temperature and humidity control to industry. Mr. Stacey has been on active duty with the Navy since 1940. In 1935 he left Carrier to organize the firm of Buensod-Stacey, Inc., which engineered many important air conditioning installations in the New York area.

"CAN'T BE BEAT FOR EVEN HEAT"

JACOBUS Air Valves

Since J 1922

5 Good Reasons WHY YOU SHOULD INSIST UPON JACOBUS

1. A self-adjustable thermostatic control.
2. A float that will seal tight and prevent any water escaping.
3. Precision-made brass parts assure long life.
4. Designed and priced for installation only by Plumbers and Heating Contractors.
5. A vent port that can't be tampered with once you make the installation.

MAJOT AUTOMATIC MACHINE COMPANY, INC.
EAST ORANGE - NEW JERSEY

CUT YOUR INSTALLATION COSTS WITH PeTcO COMBUSTION CHAMBERS

Because each section has the exclusive PeTcO *interlocking* joint and is true in shape and size, these chambers are quickly and easily installed in any type furnace or boiler with any make oil burner.

PeTcO chambers are carefully packed in individual cartons, complete and ready for installation. No cutting, fitting or wasted material.

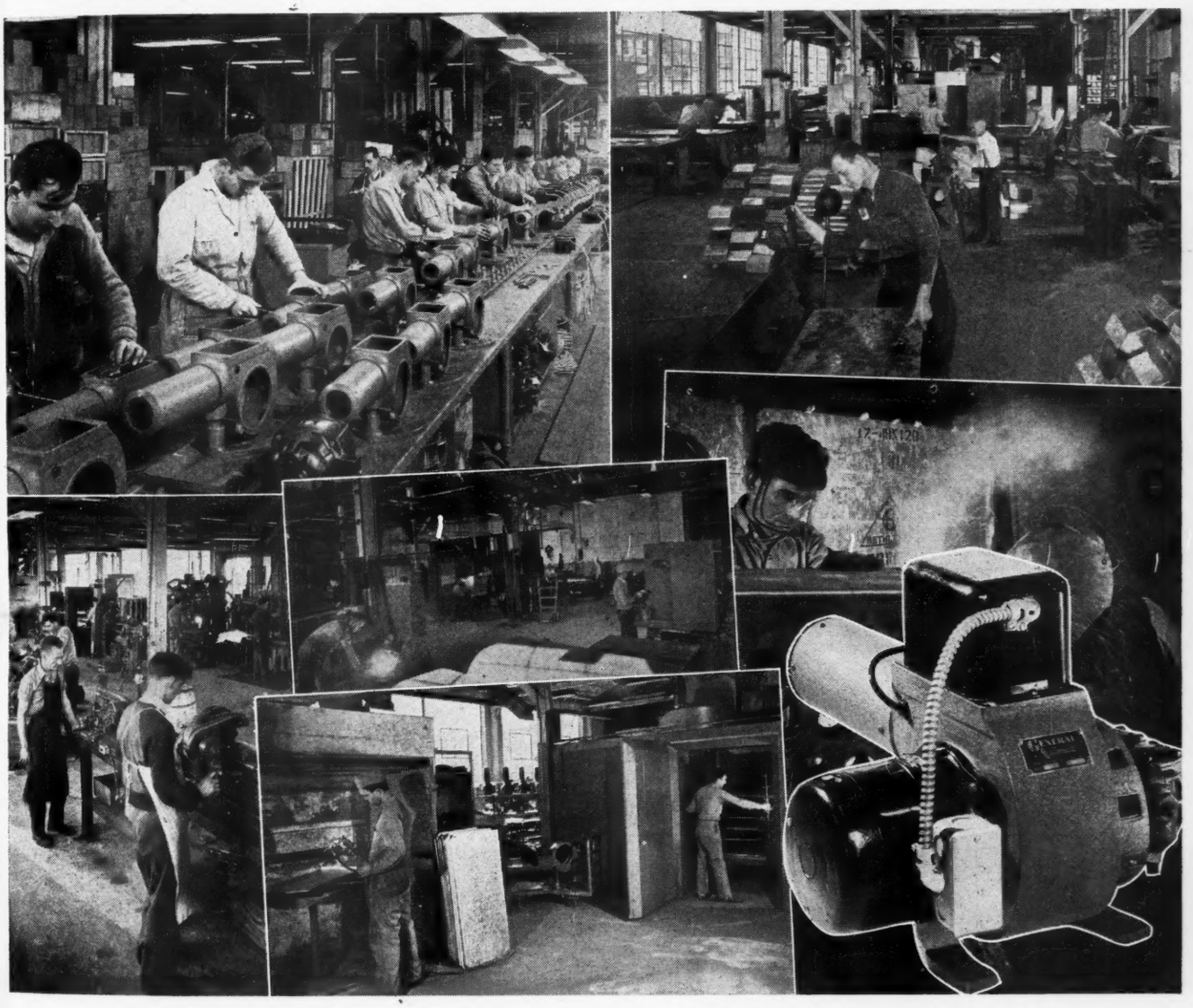
Complete refractory service to the heating industry. Special shapes cast to *your* specifications.

Write for descriptive Bulletin F-17.

B. A. PETERSON CO.
Dowagiac, Michigan

Valuable Territories Open with ONE OF AMERICA'S LARGEST

Manufacturers of Automatic Oil Heating Equipment



Modern Facilities . . . 23 years of experience . . . High engineering standards . . . thousands of satisfied customers . . . have made General Automatic "The Best Seller in the American Cellar."

★ Write—wire or phone for Dealer Franchise Information

GENERAL OIL BURNER CORP. - 2300 SINCLAIR LANE - BALTIMORE 30, MARYLAND

fueloil & oil heat

Editorial Leaks

(*Continued from page 8*)

under its own pressure. The 20-inch line is connected to the company's main gas line at Natchitoches, La., and the two lines are interconnected at Little Rock, Ark. Gas enters Little Inch at a pressure of 650 lbs. per sq. in. at the south end, and comes out of both lines in Ohio at 50 lbs. pressure. There are no boosters along the way.

As a permanent solution, their most effective use would probably be as a standby for national defense, carrying neither oil nor gas until a time of emergency. That view is well supported in an article in the November 27 issue of *National Petroleum News* by Herbert Yocum, Washington correspondent. He points out that using them regularly for either fuel would mean that they could not be put to wartime use until another arrangement could be made to supply the many basic industries that would have become dependent upon them. Moreover, he shows how present tanker fleets would have been sold or dispersed to such extent as the pipeline took over their function, and this would mean a shortage of tankers again in another war.

In a recent Washington excursion we brought out this view of holding the lines idle, and found among the agencies little objection to the idea, but considerable question as to method. War Assets Administration has had the lines appraised at some $113 million and wants that much for them. They cost more but Defense Supplies Corp. operated them during the war at a profit and they now represent a net outlay of only $70 million by RFC. It seems that they could be held idle for national defense only if they were owned by the Army or Navy. In the economy drive expected in 1947 Army and Navy budgets will be cut deeply . . . some Republican congressmen talk of cutting them a third, or about $2 billion. Under those conditions it would be difficult to get either of the services to buy the lines. Then to hold them idle but always ready for use would cost about $8 million a year, and that would be hard to squeeze into reduced budgets.

There is some talk of selling the lines for gas, with the understanding that they will be used for gas only temporarily until a 30" line could be built on the right-of-way. Such a line would carry about as much gas as the two present ones and at considerably less cost. Then the original lines could be returned to stand-by use for oil. Any way you look at it, an 1,800 mile right-of-way 75 ft. wide across the heart of the country would be quite an asset to whoever may buy it, for it could accommodate many pipelines.

If the lines should eventually carry natural gas to the East they would, of course, give us more competition, but the chances are that for several years annual oilburner sales in the East will continue to mount at least as fast as ever before. All of that gas couldn't be used for home heating because there must be year-round demand to keep the pipes full, and that means industrial applications for a lot of it.

But the whole thing is still in the air, will probably stay there a while.

◈

Ragnar Giske is the new manager of marine sales for the state of Washington Div., General Petroleum Corp., succeeding Carl J. Waage who died in Seattle on November 17.

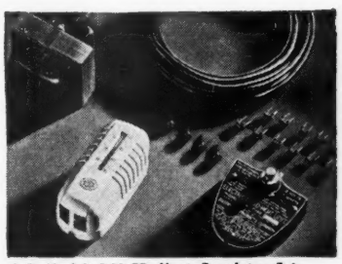
RED HEAD GAGES FOR BASEMENT TANKS

"The Standard of Comparison"

MANUFACTURED BY
THE BOSTON AUTO GAGE CO.
PITTSFIELD, MASS.

Promote EXTRA PROFITS NOW... From Your Oil Heater Customer List

$ $ $ Add Thermostatic Temperature Control with This HEAT REGULATOR SET



A-P Model 240-ED Heat Regulator Set . . . Fits all oil heaters equipped with A-P Model 240-DR, UR or YR Manual Controls.

Most new oil heaters, as well as heaters sold since 1939, can be easily equipped with this modern fuel-saving convenience! That means extra sales and profits for you on today's heaters as well as a new source of income from your old customer-list. And you'll make new friends with every sale, for every home will appreciate the savings in oil, time, effort, and the uniform, healthful room temperatures possible at the mere setting of a *Thermostatic Dial.*

This A-P Heat Regulator Set is easy to install on any Vaporizing Burner Oil Heater now using the A-P 240-DR, UR, or YR Constant Level Oil Control. The "Sales Package" is complete, including an Electric Conversion Top which mounts on present manual control, an accurate Wall Thermostat, a Transformer, and all accessories for quick and easy installation.

Make these extra Winter Profits NOW! Write for prices, samples and selling material.

(Be sure your new Heater Lines use A-P DEPENDABLE Oil Controls — for faster sales, greater customer satisfaction.)

AUTOMATIC PRODUCTS COMPANY

2458 NORTH THIRTY-SECOND STREET, MILWAUKEE 10, WISCONSIN

DEPENDABLE *Oil Controls*

DESIGNED TO ELIMINATE SERVICING

Dealers Say... THIS MAKES SENSE!

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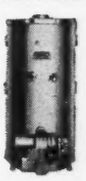
WHOLESALER-DEALER PARTNERSHIP PLAN — WAYNE HOME EQUIPMENT

1. A FULL LINE OF QUALITY EQUIPMENT.

SOF-LUX SOFTENERS

SHALLOW WELL TURBINE WATER SYSTEMS

DEEP WELL JET WATER SYSTEMS



OIL BURNING BOILERS

CONVERSION OIL BURNERS

GAS & OIL WINTER AIR CONDITIONERS

2. A FIRM SALES POLICY FOR A SOUND FUTURE & DEPENDABLE PROFIT.

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NATIONAL MAGAZINE AND FARM ADVERTISING NOW BEING RUN TO 9,000,000 READERS

ARE *YOU* READY FOR A BUYERS' MARKET?

Wayne offers the merchandise advantages of a full line based on 25 years of building precision home equipment.

Wayne backs this quality line with the Wholesaler-Dealer Partnership Plan to assure a profitable future for independent wholesalers and dealers.

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Wayne's program assures a sound business future because Wayne Home Equipment is basic, required equipment for both town and country homes.

BUILD FOR A SOLID FUTURE WITH WAYNE

. . . . . .

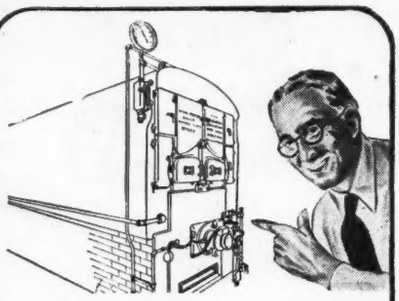
Write for Details of The Partnership Plan

SOME FULL LINE DEALERSHIPS ARE OPEN

THE WAYNE HOME EQUIPMENT CO., INC.

FORT WAYNE, INDIANA

fueloil & oil heat



"Another thing ...it's practically self-cleaning"

Important feature, that! . . . Let Friend Plant Engineer tell you why:

"The vertical water tube construction's the answer. Soot just can't cling to a smooth, vertical surface. Ever notice that dust settles on the *top* — not on the *legs* of a table? Most of the heating surface in H. B. Smith boilers is straight up and down — like the table legs. That's why it accumulates so little soot. When we do want to clean the boiler, those large doors give us easy access to *all* the flues."

Best salesman we have! And he agrees, too, that H. B. Smith boilers last longer . . . resist rust and corrosion . . . are easily installed on new or replacement jobs.

H. B. Smith Cast-Iron Boilers are best for commercial, industrial, institutional, and residential use, with all fuels and fuel-burning methods. You can specify them with confidence, always. Write for your free catalog.

Visit our Exhibit at the International Heating and Ventilating Exposition in Cleveland.

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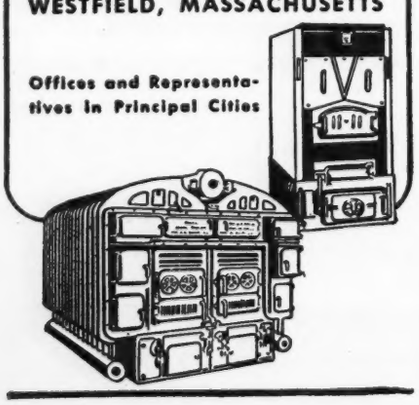
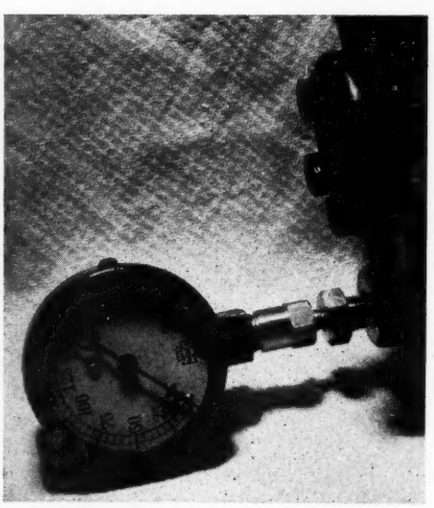


New Products

Gauge Adaptor for Checking Pump Pressure

A-GAUGE ADAPTOR for checking pump pressures through the air bleeder valve is now being manufactured by the Hydrovalve Co., New York 18, N. Y. By removing the socket head screw from the air bleeder valve, the adaptor can be screwed into the valve, and the fuel unit is ready for testing. This adaptor, #JS-4, can be screwed into the air bleeder valve which is standard on common types of units, and



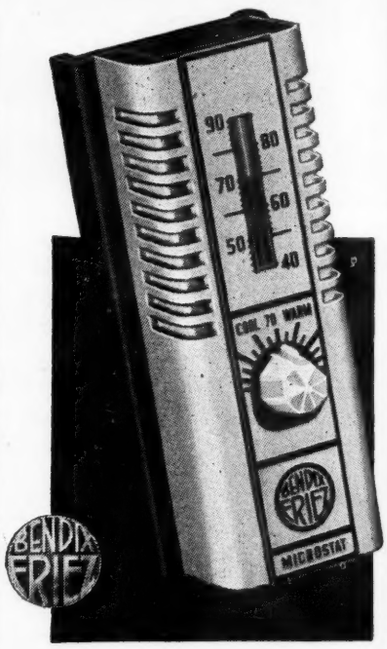
also into the Hydrovalve #RS-8 air bleeder valve.

The manufacturer maintains that checking pump pressures by means of this adaptor can be made in less than a minute, as it eliminates the difficult job of removing inaccessible, frozen and mutilated valves and pipe plugs.

Vulcan Radi-Vector Is For Baseboard Heating

THE RADI-VECTOR unit, manufactured by Vulcan Radiator Co., Hartford, Conn., combines radiation and convection heat in its application for baseboard heating. The EDR ratings of the units by shop

AVAILABLE *for* IMMEDIATE DELIVERY



MICROSTAT* *by* BENDIX-FRIEZ

Yes . . . MICROSTAT — a *precision* thermostat—is available for immediate delivery!

MICROSTAT is a two-wire, bimetal actuated thermostat of the single pole, single throw, snap-acting type. A fine instrument for the close control of heating or cooling equipment. Heating type supplied with or without heat anticipator.

Manufactured by Bendix-Friez—one of America's foremost specialists in thermal controls and weather instruments—MICROSTAT is the ideal thermostat for use in low voltage control circuits. Available in Standard Bronze or Modern Ivory.

Write, wire or telephone today for further information.

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at the Cleveland Show

THE GREATEST ADVANCEMENT IN MODERN OIL HEATING

HOMEASE PRODUCTS DIVISION, INC.
BOGUE BUILDING
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TEESDALE FUEL OIL PUMPS
PERFORM with PRECISION
"HEART-BEAT of the BURNER'S OIL FLOW"

CONTACT THE
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SILOO FUEL OIL TANK SOLVENT
FOR MAXIMUM BURNER EFFICIENCY

SILOO FUEL OIL TANK SOLVENT is the positive, safe method of cleaning fuel oil storage tanks and equipment. This easy-to-use liquid disperses water due to condensation—clears clogged pipe lines, oil filters, strainers and burners. Just pour it into the tank. By using **SILOO,** free flow of oil for improved combustion and heater operation is assured.

SILOO FUEL OIL TANK SOLVENT is absolutely harmless to fuel and equipment. It is non-inflammable, non-explosive, non-toxic, non-corrosive—always safe to store and use. Ideal for space heaters, oil stoves, kerosene lamps, Diesel engines, etc.

SILOO FUEL OIL TANK SOLVENT is nationally advertised and boasts a large, eager market. Distributors and jobbers—take advantage of this widely accepted product—write for details today!

SOLVENTS FOR ALL TYPES OF PETROLEUM RESIDUES
Petroleum Solvents
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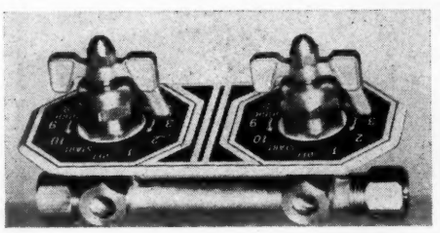
tests has proven to be 2.6 sq. ft. per lineal ft. at 1 lb. steam with air at 70°, when installation is made according to factory instructions. Made of seamless steel pipe, or hot rolled pressure tube, the fins are attached with a patented offset construction and fastened securely without the use of solder. The units are light in weight and installation requires only a few fittings. All are standardized, with sections furnished cut to size with pipe ends threaded or chamfered for welding. Other Vulcan radiators, steel or copper, are furnished in a variety of sizes for installation as individual radiators for home, commercial or industrial application.

Metering Valve for Blue Flame Oilburners

METERING VALVES for shell type, blue flame oilburners used in ranges, space heaters and water heaters are being offered by Oil Burner Devices, Inc., Worcester, Mass. They are made in single and



dual types and all are non-corrosive with a forged brass body. All inside fittings are precision made, according to the manufacturer.

Features claimed for the valves include multiple thread stem, V-groove for accurate metering, and quick starting flow. It is said to have an unusually wide firing range and will hold a minimum flame without fading.

Piqua Machine Makes Motors for Oilburners

OILBURNER MOTORS have been put in production by the Piqua Machine & Mfg. Co., Piqua, Ohio, according to an announcement by R. D. Speigle, president. The unit now being produced is a 1/6 hp, 1725 rpm, flange mounted motor. It has sleeve bearings and is single phase, 60-cycle, 110 volt. The motor, designed for oilburner application, is claimed to be unusually compact. The over-all length of the flange mount, 1/6 hp motor is 5-3/16 ins.

Mr. Speigle reports motors already have been supplied to oilburner manufacturers and the company has received much favorable comment on the quality and appearance of the motor.

Straight and U-Tube Oil Preheaters

A WIDE RANGE OF SIZES in both straight tube and U-tube oil preheaters comprise the line made by Water Tube Boiler & Tank Co., Chicago 9, Ill. Wa-Tu-Bo heaters are designed for use on industrial oilburner installations and have been designed for efficient operation. Arrangement of passes through the tubes is such that a turbulence is created, exposing a greater area of cooler oil to the hot tube surfaces. Oil is circulated back and forth several times during its passage through the heater. Installation of duplex heater is simplified by the placement of oil inlet and outlet opposite each other. Steel tubes in the heaters are expanded into steel tube sheets, welded at both ends of a steel shell. No internal gaskets or plugs are used, eliminating possibility of leaks. Either hot water or steam may be used as the heating medium.

A GOOD GAUGE COMPLETES A GOOD INSTALLATION

LEVELOMETER
Tank Gauges
"THEY'RE ALWAYS DEPENDABLE"

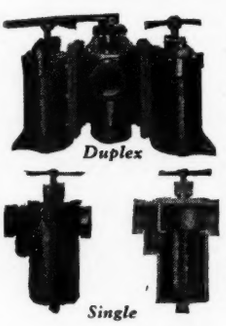
"LIQUIDS WORTH STORING ARE WORTH MEASURING"

THE LIQUIDOMETER CORP.
36-19 SKILLMAN AVE., LONG ISLAND CITY, N.Y.

KRAISSL
FILTERS
STRAINERS
PUMPS
Keep Fuel Oil Lines Open and Active

Year-in, year-out performance proves the skill of KRAISSL engineering design and the honesty of KRAISSL manufacture.

Class 72 Strainers and Filters



Single and Duplex types for suction or discharge service — any practical degree of filtration in units designed for low pressures as well as up to 500 lbs. hydrostatic test—easily removable filter basket insures quick cleaning.

Class 60 Heavy Oil Pumps

Standard equipment wherever independent pump and motor sets or booster pumps for pump-type burners are required.

Submit your fuel-line problems to KRAISSL engineers—literature and prices on request.

295 WILLIAMS AVE.
THE KRAISSL COMPANY
HACKENSACK, N. J.

. . . still unexcelled . . .

ROTOFLAME

. . . The oil burner that has led the field year after year in operating efficiency.

Our many years of experience, producing economical precision built oil burners of the most advanced engineering design, assure you of truly dependable, service-free heating equipment.

Rotoflame has selling features that enable you to meet any competition and provide your customers with real satisfactory heating service year in and year out.

It will pay you to wait for

ROTOFLAME

a product of

OIL EQUIPMENT LABORATORIES, Inc.

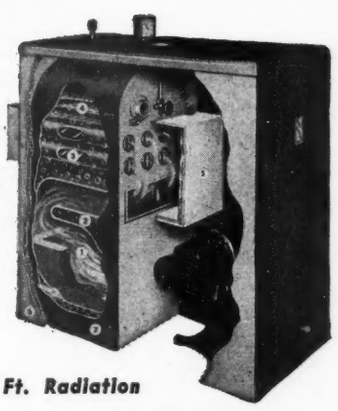
ELIZABETH, NEW JERSEY

THE NEW YORKER

HERE'S the STEEL BOILER for LONG LIFE AND QUIET OPERATION

ALL STEEL, RESIDENCE
OIL BURNING BOILER

The tubes of this boiler are extra heavy. The tube wall thickness is one quarter inch, the same thickness as the boiler plate. This makes tube replacement unnecessary and gives whole boiler exceeding long life.



400 to 1100 Sq. Ft. Radiation

BUILT TO EXCEL IN DEPENDABILITY, LONG LIFE, AND LOW OPERATING COST

TITUSVILLE SALES COMPANY INC.

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Circle 6-2861

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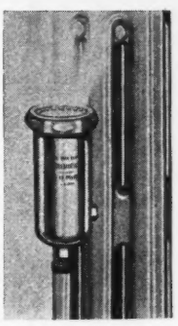
don't let LACK OF HUMIDITY spoil your heating jobs!



No. 95 AUTO-VENT installed on steam radiator in place of the usual air valve.

Use AUTO-VENT AUTOMATIC HUMIDIFIER

on low pressure steam systems

"IT VENTS AS IT HUMIDIFIES"

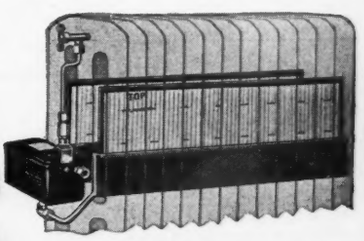
Discharges one pint of water vapor per hour at one lb. steam pressure—sufficient humidity for 2,000 cu. ft. of space. Easily regulated—noiseless in operation. To install, merely remove air valve and screw in AUTO-VENT.

Made entirely from non-ferrous metals—lasts indefinitely. Nationally advertised—thousands now in use giving perfect satisfaction.

* *

on hot water or steam radiators use

Ol' Faithful AUTOMATIC HUMIDIFIER



No. 34 OL' FAITHFUL Humidifier installed on hot water radiator.

Equipped with patented copper bound, corrugated evaporators which vaporize as much as 1½ gal. of water daily at hot water radiator temperature of 130°—capacities 20% greater on steam radiators. Constant water line automatically maintained. Easily installed.

Supply water can be taken directly from hot water radiator, or on steam radiator from nearest water line. Made in three sizes: 18", 24" and 36" lengths. Furnished complete as shown.

* * *

Use Our
CONVECTOR
Automatic Humidifier

for all types of Warm Air Furnaces and Winter Air Conditioning Systems . . . MAID-O'-MIST also manufactures Water Line Control Valves and other Heating Specialties.

WRITE TODAY for engineering data and prices on entire MAID-O'-MIST line . . . SEE OUR EXHIBIT—at Cleveland Air Conditioning Show, Booth 441.

MAID-O'-MIST INC.

3221 N. PULASKI RD.
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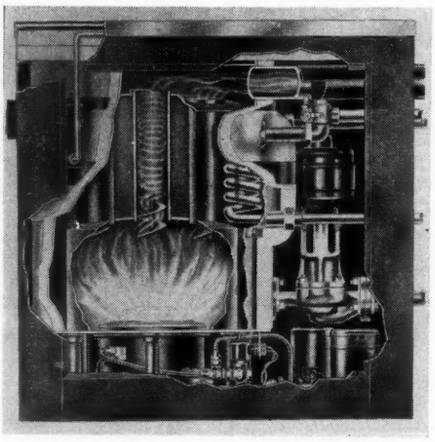
AUTOMATIC HUMIDIFIERS FOR ALL TYPES OF HEATING SYSTEMS

Flexible Tube Flashlights Come In Three Sizes

FLEXIBLE TUBE FLASHLIGHTS, made by Aero-Motive Mfg. Co., Kalamazoo 24, Mich., are available in three sizes. The long, flexible tube extension bulb retainers provide a beam of shadowless light for reaching inaccessible areas. Junior and Junior Feluxe size of Flex-Lite use penlite batteries; the Master size employs regular flashlight batteries.

Boiler-Burner Unit Is Small and Compact

AN OILFIRED BOILER-BURNER UNIT, announced by Miller Co., Heating Products Div., Meriden, Conn., is designed to furnish heat and domestic hot water for the average 4 or 5 room house. Jacket dimensions of the unit are 24" wide, 36" long and 36" high, with a linoleum covered utility top. The insulated, steel boiler is fabricated with 9 vertical tubes, into each of which is placed a Spiralotor to give flue gases a whirling motion to effectively scrub tube walls. A Miller vaporizing burner, designed to use No. 1, 2 or 3 oil, fires the unit with gas-electric ignition, and is said to operate successfully on catalytic cracked fuel. The unit comes complete with constant level valve, high limit control, aquastat, ignition and water



circulator controls, thermostat and draft regulator. An indirect copper coil supplies domestic hot water. For homes without basements, the unit, without its jacket, can be installed in an ordinary kitchen cabinet.

Domestic Hot Water from Winter Air Conditioner

A FORCED WARM AIR UNIT that supplies domestic hot water summer and winter has been announced by the Auto Heat Corp., New York. The company, long a manufacturer of domestic oilburners, was known to be working on the unit before the war.

Balanced dampers in the plenum chamber of the warm air unit are opened by air pressure when the blower is started by the thermostat's call for heat. When there is no demand for heat the dampers close to keep the warm air entirely within the unit.

Hot water coils of the extended surface type are piped to a storage tank. Hot air, direct from the plenum, is forced over the coils by a propeller type fan whenever the chamber temperature reaches a predetermined level. The burner is operated by the limit control on the hot water tank, subject to regulation by the bonnet control.

The unit is fitted with filters, humidifier and blower for room air, and is encased in a two-tone baked enamel cabinet.

FUELTONE

TONES UP FUEL OIL

Disperses these enemies of good combustion, making entire tank of oil UNIFORM AND USABLE!

SLUDGE
HEAVY ENDS
MOISTURE
GUMS
ACIDS

- **Prevents clogging of lines and strainers. Improves atomization, starting and general boiler operation.**
- **FUELTONE has treated many millions of gallons of fuel oil. *It has never been known to fail!***
- **ECONOMICAL—Merely use 1 pt. to 250 gals. of oil initially. Thereafter—1 pt. to 1,000 gals.**

OTHER AMPION PRODUCTS

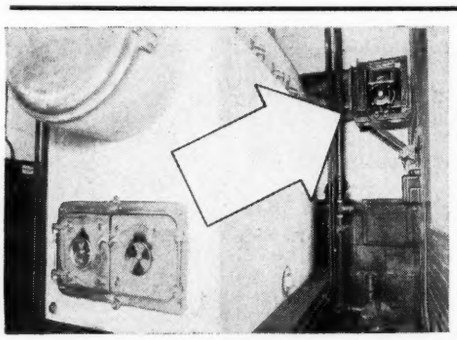
CARBOLITE
• Soot Remover In Gun Ready to Use

AQUATONE
• Boiler Water Rust-Remover

SEALEAK
• Stops Boiler Leaks

Distributors & Jobbers—
Imprint Circulars, Window Signs & Newspaper Mats Now Available!

AMPION CORP. 4-88 7th Avenue Long Island City 1, N. Y.

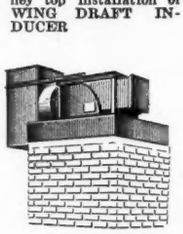


Note how the WING DRAFT INDUCER is installed here without requiring any extra space or bulky fittings. It provides abundance of draft, regardless of chimney limitations or variable weather conditions.

Induced Draft is the Answer

to many automatic burner installation problems

(Below) Typical chimney top installation of WING DRAFT INDUCER



Are you getting complete combustion on every job? If not, it may be shortage of draft, causing high fuel bills and inadequate heat. WING DRAFT INDUCERS are the answer, providing positive draft regardless of wind, weather or size of chimney. Write for a copy of Bulletin I-10, giving full details.

L. J. Wing Mfg. Co. 154 W. 14th St.
Dept. FO-7 New York 11, N. Y.

Wing Draft Inducers

HomEase Unvails its SECOND CONTRIBUTION to Modern Oil Heating

SEE IT AT BOOTH 823 IN CLEVELAND

Parakem SLUDGE REMOVER

FOR GREATER PROFITS!

The Fuel Oil Conditioner Backed By More Than 100,000,000 Gallons of Fuel Oil Experience

Gives you repeat business—your customers need Parakem to prevent sludge deposits in the storage tank, lines and oil burner. Parakem improves atomization, allows quicker starting — results in a brighter, cleaner flame.

Parakem is specially priced for resale by dealers at good mark-up.

Sold in one and 5 Gallon Cans —15, 30 and 53 Gallon Drums

Write for complete details and prices **TODAY!**

Paragon Oil Company

75 Bridgewater Street Brooklyn 22, N. Y.

IN ICICLE WEATHER

Making Fill Pipe Connections Means Lost Time . . . Frozen Fingers . . . Frayed Nerves

Forget this bother . . . with FASFILL! It's the quick fill pipe connection . . . just a turn of the wrist and FASFILL is in place. Make it up hand tight only. Build-ups are unnecessary, worn fill pipe threads make no difference. With FASFILL you have any needed connection in a jiffy! Long-wearing gaskets at all bearing points prevent oil seepage. FASFILL eliminates blowbacks and fill drip . . . makes slow fills — fast fills!

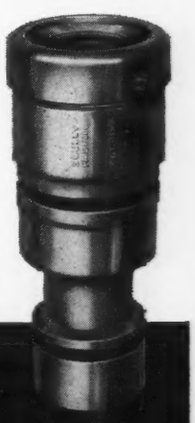
Shove The Gun Home and Let 'er Go!

There's a synthetic rubber diaphragm in the FASFILL head — just shove the gun through this diaphragm and forget about blowbacks. FASFILL is designed to hold the gun in correct position. Save your temper, save time, save money . . . with FASFILL!

SCULLY SIGNAL COMPANY
CAMBRIDGE 41, MASS.

COMPLETE SET OF SIZES IN CONVENIENT CARRYING CASE . . . ONLY

$11.50 F.O.B. CAMBRIDGE



WHEN ORDERING be sure and give us the OUTSIDE measurement across your gun nozzle.

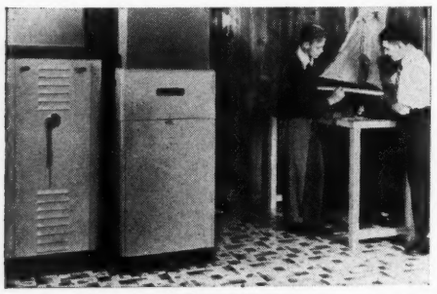
TO MAKE A QUICK OIL FILL PIPE CONNECTION USE . . .

FASFILL

fueloil & oil heat

Precipitron Units Announced for Home Use

FIRST PRODUCTION MODELS of household Precipitron units for home use have moved off the assembly line at the plant



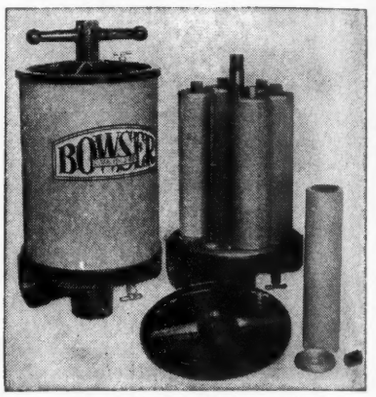
of B. F. Sturtevant Co. Div. of Westinghouse Electric, Hyde Park, Mass. Precipitrons, electrostatic air cleaners, will be available in cabinet models about the size of a refrigerator, or built into furnace units by furnace manufacturers. Air to be cleaned passes through an electrostatic field, and then enters the dust collecting cell, consisting of 69 aluminum plates set edgewise to the air stream, alternately charged negative and positive. The charged dust particles are attracted to oppositely-charged plates. High voltage direct current for the unit is produced from house current by an energizer. Cleaning the dust-collecting plates is accomplished by five sprays of hot tap water. Precipitron units are installed at the inlet side of warm air furnaces, but a cabinet model requires air ducts to fit the unit into the home's heating or ventilating system.

Liquid Soot Destroyer Placed in Fuel Tank

A LIQUID SOOT DESTROYER is compounded for use in oil and kerosene heating and cooking units. According to its manufacturer, G. N. Coughlan Co., West Orange, N. J., it effectively removes existing accumulations of soot and aids in preventing additional deposits from forming. Liquid Chimney Sweep is poured into the storage tank through regular filler openings in ratios of 1 pt. for every 125 gallons, 1 qt. for every 250 gallons, 1 gallon for every 1,000 gallons of oil in tank. For small stoves 2 tablespoons are added to each 5 gallons. Subsequent applications call for half quantities when tanks are refilled.

New Bowser Filters

THREE MODELS, in ten sizes, of a filter announced by Bowser, Inc., Fort Wayne, Ind., contain replaceable, resin-impregnated, cellulose elements. The expendable cellulose cartridges are completely neutral, contain no chemical bleach and will not



remove additives or inhibitors or affect the color of the filtered liquid except by removal of foreign matter. Capacities range from 2/5 to 300 gph, with filtering areas from .2 to 100 sq. ft. All are equipped with vent and drain valves and bolted covers.

3 Good GAUGES
FULL
EMPTY
RANGE
Designed to fit 1½" or 2" openings on all 55 gal. storage tanks.
Patented MEL OIL GAUGES are unaffected by atmosphere . . . vacuum sealed against leakage . . . furnished with all metal rotating floats . . . readings furnished in two colors printed on plastic tube . . . made of the finest materials available . . . moderately priced due to specialized quantity production . . . carry a factory guarantee. Available for immediate deliveries.
SAUSAGE
No mechanical movements. Can not get out of order. Guaranteed for life of tank.
ADJUSTABLE
For quick, accurate reading of tank contents at all times from any direction.
Mel-Gauge COMPANY
EAST HAVEN, CONNECTICUT

"Everything for the Trade"

Headquarters for

HARD TO GET PARTS

We Have a Large Stock of Repair and Replacement Parts for most makes of Burners

Mail Orders Promptly Filled

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Catalogs to Appear Soon
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GUARDIAN *flexible* COUPLINGS

Sleeve end of coupling is close sliding fit on blower wheel hub. Power is transmitted through four spline ribs of coupling fitting four spline grooves in blower wheel hub.

FOR OIL BURNERS

These exclusive direct drive couplings with rubberized cushion gripped permanently, have no parts to lubricate or get out of order. Guardian Flexible Couplings minimize misalignment, free-end float, and backlash. Custom-made for specific jobs. Over a million tested and proved in oil burners in last ten years.

SEE OUR EXHIBIT—Booth 509—Heating and Ventilating Exposition, Cleveland, Jan. 27-31

GUARDIAN PRODUCTS CORP.
218 E. Michigan St., Michigan City, Ind.

WRITE or WIRE

THE AMERICAN HEATING & ENGINEERING CO.

wishes to announce:

OIL BURNERS—GUN TYPE
For converting any type furnace or boiler
1 to 2½ gallons per hour capacity

OIL RANGE BURNERS
For converting coal or wood ranges or heaters to controlled oil heat

GAS HEATERS—RADIANT TYPE
24,000 BTU rating, 100% Stainless Steel Unit

GAS CONVERSION BURNERS—
AGA Certified and Listed
For converting any type furnace or boiler to automatic gas heat

WRITE—WIRE—Phone to insure prompt delivery

AMERICAN HEATING & ENGINEERING COMPANY
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On display for the first time, the Advanced 1947 Crotty Heat Generators for Homes . . . products of the same engineering skill responsible for the outstanding 1946 contribution in steam generation — the CROTTY FORCED CIRCULATION WATER WALL FURNACE for large industrials and multiple-dwellings. The comprehensive new HOME-HEATING LINE meets every need. See the newest low-cost housing unit illustrated here. Visit us in BOOTH 8.

If you can't come to Cleveland, write us for all the facts. Find out about our 1947 Program for Crotty Distributors!

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SOLVE YOUR VENTING PROBLEMS

GORTON *Equalizing Valves for Radiators and Gorton Air Eliminators For Mains*

Guaranteed to heat all radiators evenly and quickly on 4 to 8 ounces vapor pressure.

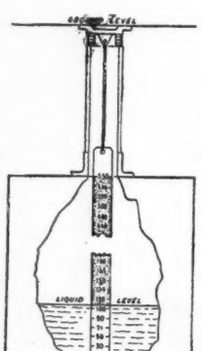
Bulletin No. 114 gladly sent upon request.

GORTON HEATING CORP., Cranford, New Jersey

Since 1887 Manufacturers of Heating Equipment

Gallonage Gauge Tape For Underground Tanks

SWEET'S gauge for underground tanks is a frosted, flexible plastic tape, attached to the present fill-cap by a special bolt and rustproof chain. When immersed in fueloil the tape becomes clear, giving gallonage readings of the amount of oil in the tank. To attach to the fill cap, it is necessary to drill and tap the cap with a No. 22 drill and 10-32 tap. The chain furnished as part of the gauge may have links removed or added to it to accommodate tanks of different diameters. The gauge is manufactured by Sweet Practical Products Co., Inc., Hackensack, N. J.



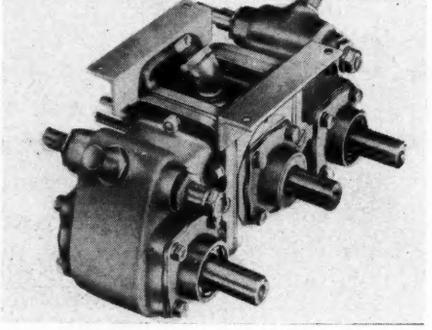
Heat Mover to Solve Problems of Stratification

ALDEN PRODUCTS CO., Detroit 26, Mich., has announced the Alden Heat Mover, a bracket mounted propeller type fan designed to move warm air off the ceiling and put it down into the living space. It is intended for both winter and summer use.

The fan is mounted on a rod which can be adjusted for height, or turned in any desired direction. By use of additional brackets the unit can be moved from room to room as the need may arise for air movement.

Power-Divider For Tank Truck Pumps

H. S. WATSON CO., San Francisco, Calif., has developed a power-divider, built to simplify driving of two independent pumps on fueloil tank trucks. Pumps can be operated simultaneously or independently, and the divider can be furnished with a third shaft extension for driving of hose reels or other equipment. It is direct-driven by a needle-bearing shaft from a power take-off mounted on the truck's transmission. A range of speed combinations is available to drive pumps at correct speed without racing or lugging the engine.



Air Valves Feature Thermostatic Control

JACOBUS AIR VALVES, a product of Majot Automatic Machine Co., Inc., East Orange, N. J., are available in a range of sizes for application to one and two pipe systems, as well as for installations on mains. The valve features a self-adjustable thermostatic control, which permits cold air to escape before closing vent port, and a float designed to seal tight and prevent water from escaping. Valves for one and two pipe systems can be furnished in straight or angle types; those for mains with straight stems only.

Bock

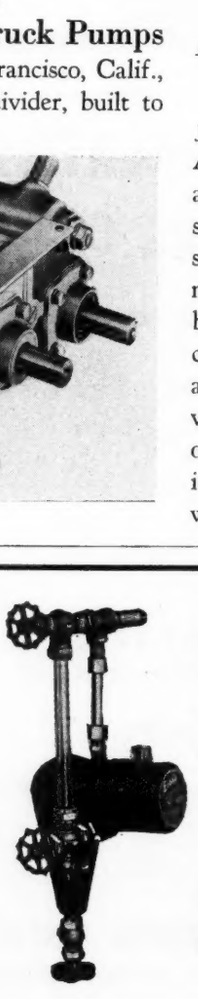
OIL BURNING WATER HEATERS

Automatic Patented Spark ignition

Five sizes, with vaporizing or pressure type burners, electric ignition, thermostatic control, modern design--the best in water heaters.

Write today for full information.

Bock CORPORATION MADISON, WISCONSIN



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Low-Water Cut-Offs have a Mercury Switch which insures positive operation under all Conditions.

ECONO PRODUCTS CO.
250 Stuart St. Boston 16, Mass.
HUBbard 5990

A Check List of Oilheating Information

1941-1942 SPECIFICATIONS BOOK OF OIL BURNERS AND FUELOIL

Gives specifications for 2200 models and makes of burners by 237 manufacturers. Gives grade of oil officially specified for each burner, method of atomization, air source, ignition data, oil feed, gph rating and motor size **50c**
(Bulk purchase prices on request.)

"Oilburner Combustion Chambers." Complete and concise study, illustrated with charts, illustrations and reference tables. Text covers both precast and those built on-the-job. 23 pages **50c**

"Degree Day Handbook." Useful for computing oil consumption by the degree day method **$3.00**

REDUCING FUEL OIL BILLS

This booklet will help you show homeowners, in a language they can understand, how you can save them money. Minimize your customers' oil bills and make a real profit with the right kind of service **50c**

KNOWING THE A TO Z OF CO_2

This invaluable booklet shows you how you can test your customers' burners by modern methods obtaining a high CO_2 rating and a low stack temperature. Be efficient and use this up-to-date booklet in your service work **$1.00**

Oil Burners, by Kalman Steiner, includes discussion of fundamental and advanced engineering and methods of oilburner design, construction, installation, operation and maintenance. Covers the characteristics, specifications, combustion, handling, and applications of fueloil. 436 p., many tables, charts, pictures .....**$5.00 each**

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"Basic Service Text for Pressure Type Burners." This manual has been prepared by G. T. Kaufman, technical secretary of the Oil Heat Institute of America, and is intended for basic training of installers and service men in residential oilheating. It is also a useful reference source for those who have completed the training courses. Chapter heatings include: Oilheating, Oilburner Installation, Tanks and Piping, Pumps-Valves-Strainers, Fans, Nozzles, Motors, Transformers, Ignition Systems, Controls, Boilers, Gravity and Forced Warm Air, Heating Load, Water Heating, Combustion Chambers, Chimneys and Draft, Testing Efficiency, Maintenance, Service Procedures. A good, elementary book. Quiz questions given after each chapter. Pocket size. 216 pages. Paper cover **$2.00**

"Showdown; Oil vs. Gas Cost." Here in a 4-page booklet is the unbiased story of just what a group of bill-weary consumers found out about gas heating costs, and why many of them have switched to oil .....**Price 25c**

"Installation Cost Sheets." Form for keeping an accurate record of the costs on each installation. Helps protect profits by showing exactly how much the installation expense is on each job. Size 8 x 21½ folded twice to fit 8½ x 11 binder . . . 100 sheets **$8.25**; 200—**$9.15**; 300—**$10.00**; 500—**$11.85.**

"Operating the Automatic Delivery System." Operation and refinements of a simple card system which tells to the day when a customer needs oil. Based on degree days. Organizes work of men and trucks .....**50c each**

"BETTER OILHEATING"
2nd Edition . . . Enlarged

There are 110 text pages and nearly 140 illustrations besides many tables and charts and short service hints. Bound in heavy paper. 8½" x 11". Covers trouble-shooting, field repair and efficiency testing to save oil. Valuable book for individual study or supplementary text for service schools. For all dealers, service and installation men. Many topics cover: fireboxes, draft, wiring, motors, controls, nozzles, pumps, baffles, efficiency, heating, etc. **$2.00**

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"Servicing One Pipe Steam Systems"—4 pages of practical hints on radiator air valves, boiler accessories, balancing systems, etc. **25c**

"Profits Mandatory" — An analysis of company operations in the house insulating business **10c**

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"Complete Burner Service Includes Precautions Against Trouble"—This is extremely valuable in planning service business **10c**

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Because of the thousands of small orders we receive, we ask that cash, stamps, money orders or checks be sent with all orders. If you wish to order C.O.D., an extra charge of 10% is made to cover shipping and collection fees.

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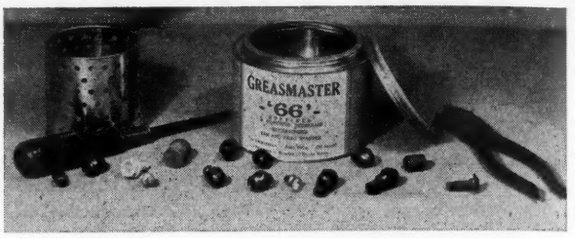
EVERY TOOLKIT MUST CONTAIN A NEW

"STRIPKIT" (GREASMASTER "66")

QUICKLY STRIPS AND REMOVES
PAINT—TAR—CARBON—SLUDGE
FROM STRAINERS—NOZZLES—
PARTS—ENTIRE UNITS



CONTENTS 32 FL. OZS.

A Product of

STEWART-HALL CHEMICAL CORP., MOUNT VERNON, N. Y.

DISTRIBUTOR ACCOUNTS IN DESIGNATED AREAS INVITED

Electronic Combustion Control Guards Water Line

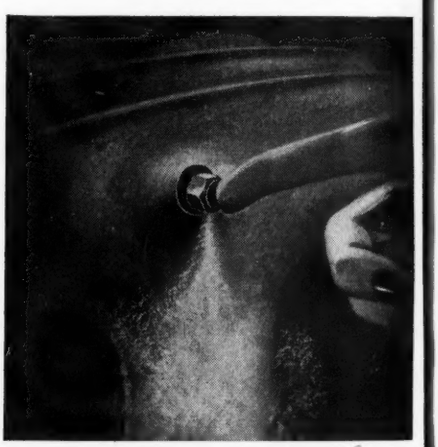
FIREYE COMBUSTION Control Type F18TS combined in a single unit safeguards against the hazards of flame failure and dangerously low boiler water level. It is designed to protect commercial and industrial oilburning equipment.

Fireye F18TS consists of a phototube and amplifying system housed in a dust-tight aluminum case. The entire control is mounted directly on the furnace wall and is aligned in a manner which permits the photoelectric cell to observe the flame through a two-inch pipe connection which serves as both a sighting tube and a support for the equipment.

The unit protects against dangerously low boiler water level by means of a single probe which is mounted in auxiliary fitting Type 65BF1. The probe fitting is mounted parallel to the boiler water column and wired to Fireye Control. The bottom of the probe defines the danger point below which boiler water must not fall. Should boiler water fall below the safety probe, Fireye immediately cuts off fuel supply or sounds an alarm.

Push-Button Valve Bleeds Radiators

NEW AIR-VENT VALVES, a product of Curtis Automotive Devices, Inc., Dayton 7, Ohio, relieves air from hot water radiators, convectors, panel radiation, pumps and allied units. When air accumulates in the radiator or pipe lines, finger tip pressure on the push button releases it. Air and water are deflected downward. Releasing the push button shuts off the valve. The valve, 3/4" long with standard



1/8" pipe thread and 7/16" hex head, contains a stainless steel spring and synthetic rubber seal.

Pipe Leak Clamp For All Diameters

AN ALL STAINLESS STEEL pipe-leak clamp is announced by Marman Products Co., Inc., Inglewood, Calif. This clamp has been tested without leaking at pressures exceeding 240 PSI.

The clamp consists of a Hycar pad which is resistant to deterioration by

LIGHT WILL GLOW
WHEN OIL IS LOW
THE ELECTRIC TANK GAUGE THAT MAKES
IT IMPOSSIBLE TO RUN OUT OF OIL
A quick-selling, profitable accessory. For old and new installations. Mercury switch operated. A great convenience that's appreciated by customers and recognized by them as far superior to any other measuring device. Inquiries invited from burner manufacturers, jobbers, dealers. Immediate delivery.
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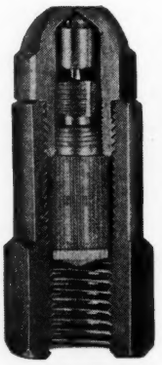

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Tip and flexible disc are made of stainless steel of the highest quality accurately machined with precision and care. Each nozzle is individually tested.

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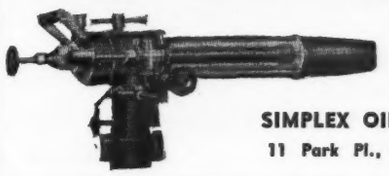

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HAND CRIMPING TOOL

IT CUTS
AND STRIPS
AND ALSO CRIMPS
Rajah Terminals to ignition cable
without the use of solder or any other tools

The RAJAH COMPANY,
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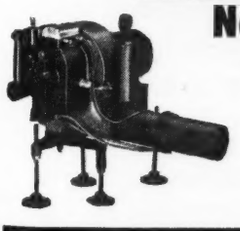

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Burn No. 5 heavy fuel oil. Self contained, all electric. Self-lubricating. Many new exclusive features. Write for full details

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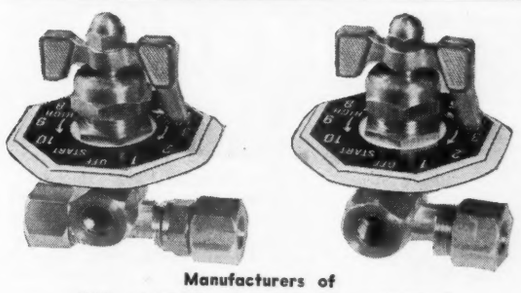

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OIL BURNER METERING VALVES
with unvarying accuracy of flow

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MERIT OIL BURNER DEVICES, INC.
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This may be the product you're looking for!

THERMOSEAL Combination Screen and Storm Sash combines all the advantages of screen, storm-sash and weather proofing in one compact unit. The patented, all-metal, adjustable Thermolok* closure frame simplifies installation, adjusts to shrinkage and expansion, eliminates seasonal fitting and provides a permanent weather seal.

The Thermoseal Three-In-One Window Insulation has a ready market. Mr. and Mrs. America are more storm sash conscious than ever before. The wartime fuel situation made fuel conservation a strong habit.

The result is ever-increasing demand for Thermoseal Three-In-One Window Insulation. Thermoseal has already acquired national distribution, is nationally advertised, and enjoys public acceptance.

AN ESTABLISHED SALES APPEAL

Thermoseal Three-In-One Windows have a sales story that really sells—greater comfort, convenience and economy (fuel savings usually pay for the windows in a few seasons) . . . rainproof, draft-free ventilation . . . only seconds to change from screens to storm sash, all from inside the house. There's nothing like Thermoseal Windows on the market. Contain many patented features. Average installations run between $200 and $300, with an attractive profit margin and very little seasonal variation in sales. Big seller in low-cost homes.

Inquiries are pouring in and demand for this product is booming. We have expanded production and are planning further expansion to take care of this huge market.

DISTRIBUTORS INVITED

A limited number of good territories are now available. If you want to obtain a valuable franchise with a live, aggressive organization marketing a fast-selling product, write today for information.

*T. M. Reg. App. For

THERMOSEAL DIVISION

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"Assures Satisfaction & Protection"

MERCOID APPROVED CONTROLS
FOR HEATING, AIR CONDITIONING, AND VARIOUS INDUSTRIAL APPLICATIONS

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M&L TANKLESS WATER HEATERS

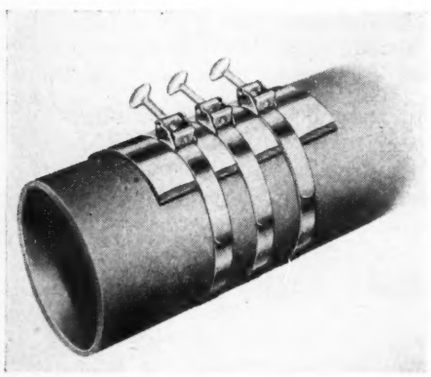
Internal types built in all sizes and shapes to fit your boiler.

COIL, ROUND, OFFSET, SPOOL, PANCAKE,
OVAL, PEAR SHAPED OR STANDARD

Immediate Deliveries

Manning & Lewis Engineering Co.
28-42 OGDEN ST. NEWARK 4, N. J.

water, gas, oil, gasoline, etc. An annealed backing plate covers the pad and can be hand-formed to the desired pipe contour.



Pad and patch plate are secured over lead with Marman Universal Stainless Steel clamps of the continuous band type which have a size range from 9/16" up to the maximum diameter for clamp. High strength and corrosion resistance are assured with this combination. The ability to use one pipe-leak clamp for numerous pipe diameters reduces stock and eliminates the necessity and expense of "fitted" clamps.

Schacht Nozzle Is Stainless Steel

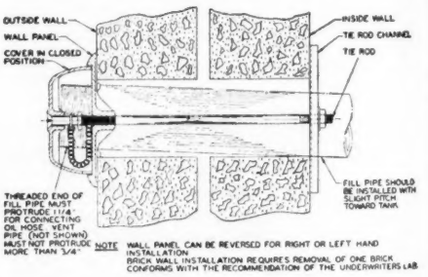
A STAINLESS STEEL oilburner nozzle, precision machined, is offered by C. A. Schacht Eng. Co., Huntington, Ind. A patented whirling chamber in the tip is designed to furnish better and more complete atomization. Sizes vary from 1.0 to 15.0 gph, in 80, 60, 45 and 30 degree angles. All nozzles are furnished with type 80 strainer.

Hot Water Circulators Are of Venturi Type

V-M SALES COMPANY, New York 17, N. Y., has announced a line of motorless hot water circulators, operating on the Venturi principle. Incoming cold water passes through the circulator, providing a force used to recirculate the water in the hot water system. Discharge end is installed toward the heater and the tank circulating line and return line, if any, are directed into the suction opening, to prevent stratification. Feedwater is mixed with the hot water and is delivered to the heater in a preheated condition. Models, with suction and discharge pipe sizes ranging from ¾" to 6", are offered in ten sizes.

Fill Pipe and Vent Combined in One Unit

COMBINO FUELOIL INLET AND VENT has been developed by Preisinger and Svabek Eng. Co., Berwyn, Ill. It provides a fill


OUTSIDE WALL
WALL PANEL
COVER IN CLOSED POSITION
INSIDE WALL
TIE ROD CHANNEL
TIE ROD
FILL PIPE SHOULD BE INSTALLED WITH SLIGHT PITCH TOWARD TANK
THREADED END OF FILL PIPE MUST PROTRUDE 1 1/4" FOR CONNECTING OIL HOSE. VENT PIPE (NOT SHOWN) MUST NOT PROTRUDE MORE THAN 3/4"
NOTE
WALL PANEL CAN BE REVERSED FOR RIGHT OR LEFT HAND INSTALLATION
BRICK WALL INSTALLATION REQUIRES REMOVAL OF ONE BRICK
CONFORMS WITH THE RECOMMENDATION OF THE UNDERWRITERS LAB

pipe and vent in one unit and can be installed in new or old homes. Conventional fill and vent pipes are installed and brought up to the outside wall. To properly fit the Combino unit, the fill pipe must protrude 1¼" and the vent pipe must not protrude more than ¾". The plate of the unit, with openings to accom-

truly TIME-TESTED

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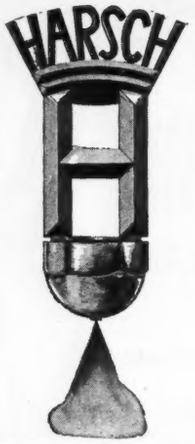

Highest Quality joined with Accuracy and Workmanship--- Responsibility gives you great Satisfaction and fullest Confidence toward our HARSCH Nozzles!

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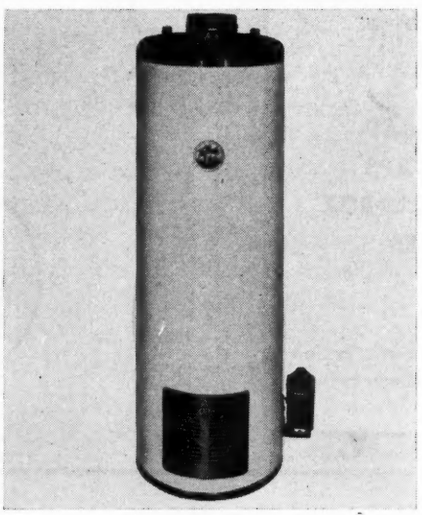
modate 2" fill pipes and up to 1¼" vent pipes, is secured to the wall with a tie rod. A chain connected cover completely conceals both pipes.

Galongage Calibrated In Inches and Gallons

GALONGAGE FUELOIL GAUGES for inside storage tanks now are available with calibrations in inches as well as gallons. The model was developed to fill requests for gauges to fit off-sized tanks. When the depth of any tank is known, the gauge can be installed and a reading obtained to show the amount of oil in the tank.

Toledo Water Heater Is Fired By Oil

MODEL 630 automatic oilfired water heater has a 30 gallon storage capacity and is equipped with a 7" vaporizing burner pedestal, mounted and sealed to a 6" flue. Offered by the Toledo Heater Co., Toledo 4, Ohio, the heater has a 45 gph recovery rate, occupying floor space of 18¾ x 21¼", 55½" high. Water connections are ¾". Standard equipment includes an automatic safety float valve with thermostat and filter screen, automatic draft regulator and leg levelling device. A steel jacket encloses the heater, finished in baked white enamel.



Three Point Pipe Gage

A POCKET-SIZED gage, to register sizes of pipe or conduit from ⅛" to 12", inclusive, is offered by Three-Point Gage Co., Chicago 13, Ill. The gage, in black rust-proof finish with etched numerals, is operated by placing fixed double contacts against outer contour of pipe to be measured. A movable section is turned until the third contact touches the pipe. A graduated scale gives measurements when all three points are in contact with pipe or conduit.

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THREE PRODUCTS OFFERED by Kenite Laboratory, New York 7, N. Y., are designed to better boiler performance. Kek, a non-caustic, non-corrosive powder, is a boiler cleaner developed to be used while the boiler is in operation. It removes scale, rust, oil and organic matter from boiler walls; minerals, gases and emulsions from boiler water. A companion product, Kenite boiler repair powder, simplifies sealing cracks in cast-iron boilers. The third item, Kenbric, is shaped like a house-brick and is tossed into the flames in a boiler. While burning slowly it removes soot from boiler walls.

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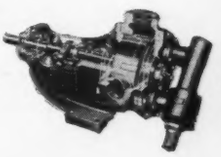
For complete information about Viking Rotary Pumps, write today for bulletin series 46S. It will be sent to you free by return mail.



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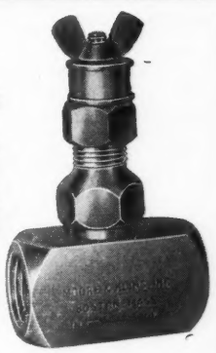

A combination shut-off valve and fusible link for oil burner installations. Self-contained automatic type—no chain, pulley, hook or weight required. Held open by fusible device against a spring. Can be manually operated—horizontal or vertical position.

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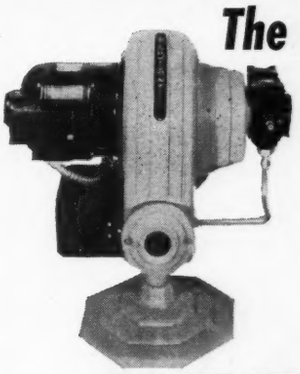

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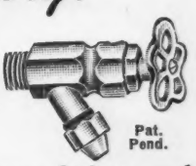

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WANTED NEW AND USED OILBURNERS, both domestic and industrial. Air mail full description with price to Jenkins Engineering Co., 518 Virginia St., Seattle, Washington.

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OIL BURNER MAN. An opportunity in Newark, N. J. for an alert man under 40 who is thoroughly familiar with both service and installation work and can supervise the activities of mechanics and helpers. Address Box 598.

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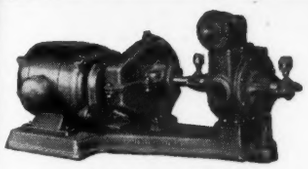

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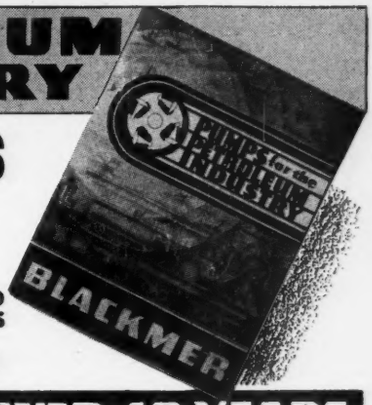

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DEGREE DAY TABLES

ONE MONTH ONLY					SEASON TO DATE (Sept. 1 to Nov. 30)			
Normal	November 1945	November 1946	Percent Change*		Normal	1945	1946	Percent Change*
756	759	670	—11.4	Albany	1282	1372	1106	—13.7
393	361	241	—38.7	Atlanta	535	489	364	—32.0
531	464	379	—28.6	Baltimore	795	689	524	—34.1
651	584	515	—20.9	Boston	1087	1023	812	—25.3
747	727	614	—17.8	Buffalo	1282	1322	995	—22.4
709	760	678	— 4.4	Chicago	1127	1312	985	—12.6
613	578	432	—29.5	Cincinnati	939	893	1051	+11.9
688	655	569	—17.3	Cleveland	1134	1138	854	—24.7
298	206	273	— 8.4	Dallas	373	299	320	—13.4
725	721	842	+16.1	Denver	1260	1297	1462	+16.0
768	770	764	— 0.5	Des Moines	1224	1304	1142	— 6.7
753	699	632	—16.1	Detroit	1249	1241	945	—24.3
768	741	654	—14.9	Grand Rapids	1327	1353	990	—24.7
691	678	587	—15.1	Hartford	1165	1187	917	—21.3
940	999	1127	+19.9	Helena	1829	1864	2254	+23.2
162	75	129	—20.4	Houston	189	108	142	—24.9
663	684	592	—10.7	Indianapolis	1027	1144	798	—22.3
599	566	555	— 7.4	Kansas City	891	881	751	—15.7
110	138	190	+72.7	Los Angeles	158	167	265	+67.7
550	513	428	—22.2	Louisville	802	763	587	—26.8
788	832	781	— 0.9	Milwaukee	1317	1506	1242	— 5.7
943	997	962	+ 2.0	Minneapolis	1590	1730	1590	...
147	102	94	—36.1	New Orleans	170	110	94	—44.7
600	530	449	—25.2	New York	925	839	610	—34.1
741	755	755	+ 1.9	Omaha	1147	1186	1112	— 3.1
548	581	475	—13.3	Philadelphia	820	984	672	—18.1
656	647	550	—16.2	Pittsburgh	1049	1096	803	—24.5
792	819	735	— 7.2	Portland, Me.	1430	1590	1317	— 7.9
540	332	656	+21.5	Portland, Ore.	947	802	1214	+28.2
675	579	568	—15.9	Providence	1142	1064	891	—22.0
558	603	527	— 5.6	St. Louis	812	916	706	—13.1
712	774	801	+12.5	Salt Lake City	1184	1292	1517	+28.1
242	336	392	+62.0	San Francisco	504	591	722	+43.3
965	976	937	— 2.9	Sault Ste. Marie	1860	1999	1725	— 7.3
558	585	686	+22.9	Seattle	1104	1166	1319	+19.5
721	708	647	—10.3	Toledo	1188	1252	975	—17.9
558	485	377	—32.4	Washington	855	741	526	—38.5

*Compared with normal.

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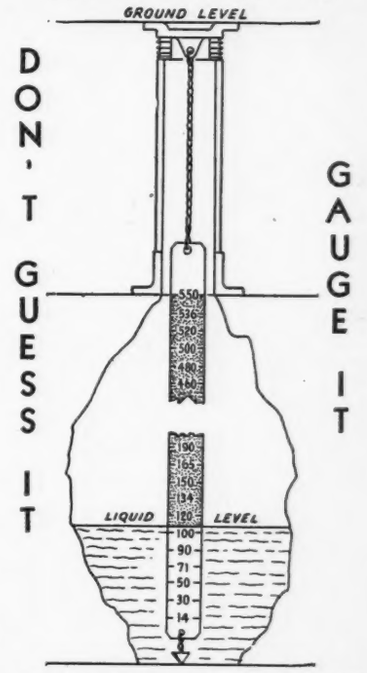

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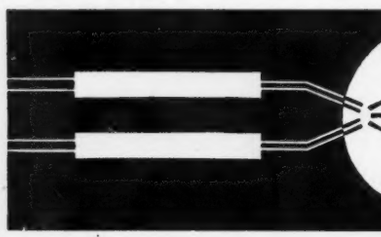

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